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STUDY OF ALTERNATIVES

Chicago's *NAVY PIER*

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STUDY OF ALTERNATIVES

U.S. DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

October 1986

Chicago's
NAVY PIER
ILLINOIS



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SUMMARY

The National Park Service, at the request of Congress, has prepared a study of the city of Chicago's Navy Pier. The study finds that Navy Pier is a regionally significant historic property, based on its historical impact on a multistate region; however, the pier does not meet the prescribed criteria for national significance as a historic site. Similarly, the pier does not currently meet the prescribed criteria for a national recreation area. These findings are described in the Reconnaissance Survey published by the National Park Service in December 1985 and are summarized in this Study of Alternatives.

The National Park Service in cooperation with representatives of Chicago Mayor Harold Washington and Illinois Governor James Thompson developed a range of possible adaptive use and management alternatives for the pier. A wide variety of uses have been proposed over the past 20 years, including private commercial and residential use as well as public use. Recently, however, there has been a growing consensus that the pier should be managed to enhance its recreational and cultural values for the maximum benefit of the public. In keeping with this consensus, all the alternatives developed for this study treat the pier as a cultural and recreational park. The alternatives also share a common premise that the most appropriate way of preserving and using the pier is to rehabilitate the existing historic structures for adaptive use. A common objective is the preservation of the general exterior configuration, architectural character, and setting of the structures, recognizing that substantial modification of the interior spaces will be necessary for adaptive use.

The adaptive use alternatives included in this study were developed around three broad themes: a Great Lakes Park, a Midwest Heritage Park, and a Chicago Cultural Park. The focus of attention is different in each alternative, but they all contain a mixture of recreational and cultural activities supported by closely related commercial services, such as restaurants and retail shops. In developing the adaptive use alternatives, the study participants assumed that the uses could be recombined and perhaps supplemented to create a proposal for the pier.

In addition to the adaptive use alternatives, four management alternatives were identified: city management (with support from additional local government partners and the private sector), state-level management (a cooperative venture between the city of Chicago and the state of Illinois), city management with federal involvement, and state-level management with federal involvement. All the alternatives involve two or more governmental entities, recognizing the pier's regional significance, its potential to attract regional or national visitors, and the magnitude of the revitalization task.

Cooperative planning with the city and state sharpened the study participants' understanding of the magnitude of the project to revitalize the pier. The capital investment will be large and the uses diverse. Realization of the pier's full potential will require creative planning and

design, innovative development financing, imaginative operational programming, and an unusual breadth and depth of management and professional expertise. With these factors in mind, the National Park Service explored a number of similar large-scale developments and identified three development models that offer useful concepts and ideas applicable at Navy Pier. These models are Harbourfront (a public-private waterfront redevelopment project directed by a Canadian crown corporation in Toronto), the Lowell National Historic Preservation Commission (a cooperative effort of governments and private organizations to revitalize a historic mill town in Massachusetts), and the pavilions of EPCOT Center (private theme attractions achieved through corporate sponsorship and innovative use of technology at Walt Disney World near Orlando, Florida). The lessons learned from these developments, and the knowledge gained through earlier cooperative efforts, were incorporated by the National Park Service into a proposal for development of Navy Pier as a unique urban park through a partnership of private corporations, civic organizations, and government agencies. This proposal represents the last phase of a multiphase planning process that is documented chronologically in this report.

The proposal combines uses from each of the three adaptive use alternatives. It calls for a variety of boating opportunities, historic ship exhibits, and pavilions focusing on the natural and cultural history of the Great Lakes. It also contains pavilions highlighting Chicago's preeminent role in the agricultural and industrial development of the Midwest, its excellence of urban design, and its rich cultural traditions. In addition, about a third of the space on the pier is reserved for a changing variety of special events. Commercial activities include a full range of food service, retail shops, and a land-based hotel/parking complex at the head of the pier. The historic trolley system is revived to provide public transportation between the pier attractions. It is assumed that the Chicago Transit Authority will eventually serve the pier as part of its planned improvements for the Near North area. The proposed on-pier transit system could be integrated with the CTA system, or it could operate independently, with an interchange near the headhouse.

The estimated capital cost of implementing the proposal is approximately \$337.6 million. This is an order-of-magnitude estimate based on the square footage costs of work performed on similar projects. The estimate includes the costs of stabilizing the pier to prevent further deterioration, repairing the infrastructure (sewage system, pier substructure, building structural systems, etc.), and providing an on-pier transit system.

The proposal could be implemented under any of the management alternatives identified by the interagency planning group. The public costs have been estimated to be \$115.9 million, or roughly 34 percent of the total project costs. The remaining costs, estimated at \$221.7 million, will be borne by a private developer.

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INTRODUCTION

Chicago's Navy Pier is a midwestern landmark whose 70-year history reflects the region's economic, cultural, and social development in the 20th century. Situated in the heart of Chicago, near the downtown Loop area, the concrete, steel, and timber structure occupies a man-made peninsula that juts into Lake Michigan for more than 3,000 feet. In cross section, the pier is a 400-foot-wide deck topped by a 300-foot-wide, low-profile, three-story structure containing nearly 600,000 square feet of building space. Originally called Municipal Pier No. 2, it was built in 1916 to serve a triple function for freight, passenger service, and recreation. Since its completion, the pier has supported a variety of uses, but it has been largely unused and vacant since the most recent decline of its shipping functions in the mid-1970s.

The question of what to do with Navy Pier has captured the imaginations of Chicagoans and many others and has become a focus of attention at all levels of government. In March 1985 Mayor Harold Washington created the Mayor's Navy Pier Task Force to recommend a development concept for the pier, emphasizing a public use approach. The city released its task force report in January 1986 (see the discussion of "City Ordinances, Plans, and Policy").

The National Park Service study of Navy Pier was directed by Congress in August 1985 as part of the report language in the supplemental appropriations bill for fiscal year 1985 (see appendix A). The task of the National Park Service, as defined by the report, was to complete a study of "the feasibility and desirability of making Chicago's Navy Pier a recreational and cultural unit within the National Park System under the operating jurisdiction of a commission made up of persons appointed by the Mayor of Chicago and the Secretary of the Interior or persons appointed by the Mayor of Chicago, the Governor of Illinois and the Secretary of the Interior with appropriate cost-sharing by Federal and city or Federal, State and city governments."

The Illinois General Assembly passed a bill in the summer of 1985 appropriating \$400,000 for the Illinois Department of Conservation to study establishment of Navy Pier as a state park. The bill was signed by Governor James Thompson in September, but the state study was delayed pending an Illinois General Assembly action, completed this spring, to increase the state bond authorization ceiling. A state study to address information needs not considered in the city's task force report or the NPS study will be initiated in the fall of 1986.

The National Park Service project has been conducted as a new area study in accordance with section 8 of the General Authorities Act of 1970, as amended by Public Law 94-458, and under the guidance contained in the National Park Service's "Planning Process Guideline" (NPS-2). New area studies are accomplished in two steps, each culminating in a report to Congress. The first step, the "reconnaissance survey," involves identification and description of an area's resource values, evaluation of

the significance of those values against criteria prescribed by the management policies of the National Park Service, and analysis of the need for protection of the area's resources. The second step, the "study of alternatives," involves the formulation of various alternatives for management and protection of the area's resources and the preliminary identification of impacts and implications of each alternative. This step is completed with National Park Service recommendations for management and protection of the area.

The Reconnaissance Survey for Navy Pier was published by the National Park Service in December 1985. It analyzed the historical and recreational resource values of Navy Pier and determined that the pier is a significant regional resource, both historically and recreationally, but does not meet the prescribed criteria for national significance. This Study of Alternatives is the final report for the study. It describes and evaluates the various alternatives considered for protection, use, and management of the pier, and presents a National Park Service proposal for adaptive use of Navy Pier as a unique urban park.

The National Park Service prepared the first phase of this study in cooperation with representatives of Chicago Mayor Harold Washington and Illinois Governor James Thompson (see "Study Participants" at the end of this report). The conceptual alternatives considered in this initial phase were developed jointly with city and state representatives during a workshop held in early December 1985 in Chicago, and they were reviewed by city and state officials. The analyses of the alternatives and the development of a proposal were completed by the National Park Service.

PART ONE:
DESCRIPTION AND ANALYSIS



BACKGROUND

REGIONAL SETTING

With a population of eight million people, Chicago is the third largest metropolitan area in the United States, 11th in the world. For over a century the city has been the focus of commerce in America's heartland, a center for manufacturing and industry, wholesale and retail trade, and corporate offices. Chicago is the corporate headquarters of 75 firms on the "Fortune 500" list. The city evolved as a major transportation crossroads, and it remains one today, with one of the world's busiest airports, terminals for the country's major western and eastern railroads, and a major hub in the interstate highway system. This inland city is also a major shipping center. The Port of Chicago, located near the southern tip of Lake Michigan at Calumet Harbor, provides shippers of raw materials and finished products access to the Great Lakes and the Saint Lawrence Seaway to the east and access to the Mississippi River to the west via the Calumet Sag Channel, the Chicago Ship Canal, and the Illinois River.

CHICAGO'S LAKEFRONT

Navy Pier is an important part of the city's 29-mile lakefront, which is almost exclusively in public ownership and use. Through the work of individuals such as Daniel J. Burnham, Edward H. Bennett, Frederick Law Olmsted, John Root, and Louis Sullivan, Chicago became a prototype of urban planning and design, and modern residents have inherited a rich legacy of parks and architecture. Burnham and Bennett's monumental 1909 Plan of Chicago, one of the first comprehensive regional plans for an American city and a milestone in urban planning, recommended that a broad belt of parks be established along the lakeshore. To the great credit of the city's leaders, much of the plan was implemented, and today the Chicago Park District, an independent taxing jurisdiction, maintains approximately 25 miles of lakefront parks encompassing about 3,000 acres of land. These parklands extend along the entire city portion of the Lake Michigan shoreline in an almost unbroken expanse of grass, trees, and shrubs.

The lakefront parks have been developed with jogging and bicycle paths, playgrounds, picnic areas and shelters, boat docks, concert facilities, swimming beaches, bridle paths, athletic fields, and other public facilities. To highlight a few, Lincoln Park to the north includes the Chicago Historical Society, the Lincoln Park Zoo, a conservatory, the Chicago Academy of Science, the Theatre on the Lake, and Belmont, Diversey, and Montrose harbors. Three parks are located south of the Chicago River: Grant Park includes the Buckingham Fountain, the Art Institute, the Shedd Aquarium, the Field Museum of Natural History, a band shell, a rose garden, and Monroe Harbor. Burnham Park includes Burnham Harbor, Soldier Field, and McCormick Place. Jackson Park, whose heritage is traced directly to the Colombian Exposition of 1893,



••••• CTA RAPID RAIL TRANSIT

||||| RTA COMMUTER RAIL

— INTERSTATE HIGHWAY

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GREATER CHICAGO AREA

Chicago's NAVY PIER

includes three harbors and the Museum of Science and Industry. These parks provide residents and regional, national, and international visitors with a wide variety of recreational activities.

DEVELOPMENT AND USE OF THE PIER

In 1912 the Chicago Harbor Commission proposed the construction of two municipal piers near the mouth of the Chicago River. The first pier was to handle freight and the second was to handle both package freight and passengers. In light of an earlier proposal from the Plan of Chicago for recreational piers in the harbor, the commission recommended that the end of the second pier be developed for recreational use. Chicago voters approved a \$5 million bond issue to finance the project. It was subsequently decided to build only one pier. The city council contracted with a renowned regional architect (Charles Sumner Frost) and a well-known local engineer (Edward Clapp Shankland) to design a multipurpose structure to serve the commercial and recreational needs of the community. The funds allocated for the pier project totaled \$4.5 million, and the remaining \$0.5 million from the bond issue was used for "other harbor facilities."

The first test piles were driven in April 1914. The completed structure, then known as Municipal Pier No. 2, opened for public use in June 1916. The massive pier (originally 3,040 feet long and 292 feet wide) was the largest of its kind in the world upon completion. With its expansive passenger and freight facilities, the pier soon became the focal point for regional commerce.

The pier buildings were divided into several distinct sections: a headhouse at the western end, twin 2,350-foot double-deck metal and glass sheds extending eastward along most of the pier, a terminal building at the eastern end of the sheds, and a recreation complex on the far eastern end of the pier. Freight was handled on the lower shed decks, while passengers loaded and unloaded on the upper decks. The terminal building included areas for information, toilets, and a restaurant with an open-air food and beverage service. The terminal building also served as the eastern terminus for the Grand Avenue and Illinois Street trolley line; the tracks and turnaround were on the pier's upper deck. A shelter building with an open-air walkway for enjoying the lake breezes connected the terminal building to an auditorium designed for concerts, public meetings, and other large gatherings. Twin observation towers on either side of the auditorium afforded views of the city and the shoreline. The easternmost end of the pier was terraced and provided landing space for small boats, excursion steamers, and passenger boats that transported people to various lakefront parks up and down the city's shoreline.

With the entry of the United States into World War I in April 1917, a portion of the space on the pier was converted for use in America's war effort. The pier served as a site for war production work, military training, and patriotic rallies. After the war the pier again became a center of commercial and recreational activity. The Pageant of Progress,

a two-week regional trade and educational show, was held on the pier in 1921 and 1922.

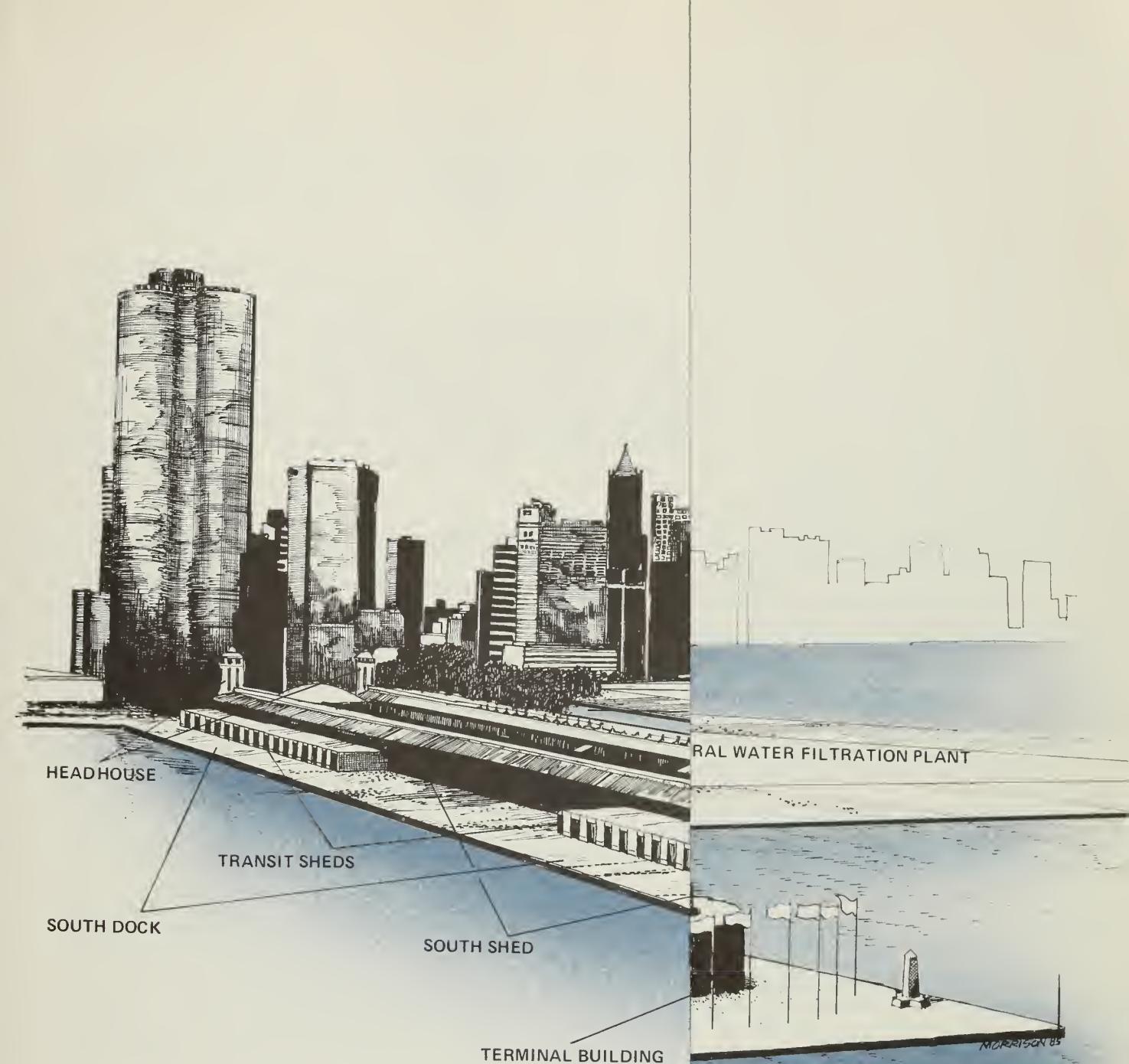
In 1927 Municipal Pier No. 2 was renamed. The Chicago City Council voted to redesignate the pier as Navy Pier to honor all the men who had served in the U.S. Navy during the war. Previously city officials had dedicated Soldier Field to honor the men serving in the U.S. Army. The official date for the rededication of the pier was May 1, 1928.

Commercial and recreational activity on the pier began declining with the onset of the Great Depression in 1929. The growing use of automobiles and trucks contributed further to the decline of commercial steamship traffic. In 1933 office space on the pier was allotted to various New Deal agencies, and between 1938 and 1941 the Works Progress Administration undertook a series of rehabilitation projects on the pier. The U.S. Navy began conducting national defense work on the pier in 1941. This activity greatly expanded starting in December 1941, with the entry of the United States into World War II. The Navy occupied the entire pier for the duration of the war, first with the Naval Aviation Ground Training School and later with the Radio Material School. The Navy ceased activities on the pier in 1946, at the same time the University of Illinois in Chicago was searching for expanded campus facilities to accommodate the returning veterans who were entering the university. The University of Illinois used buildings on the pier from September 1946 until February 1966, when all activities were transferred to the newly completed Chicago Circle Campus. The pier also reopened to commercial and recreational activities after the war, being used primarily as an exhibit hall for trade fairs too large for hotel exhibit halls.

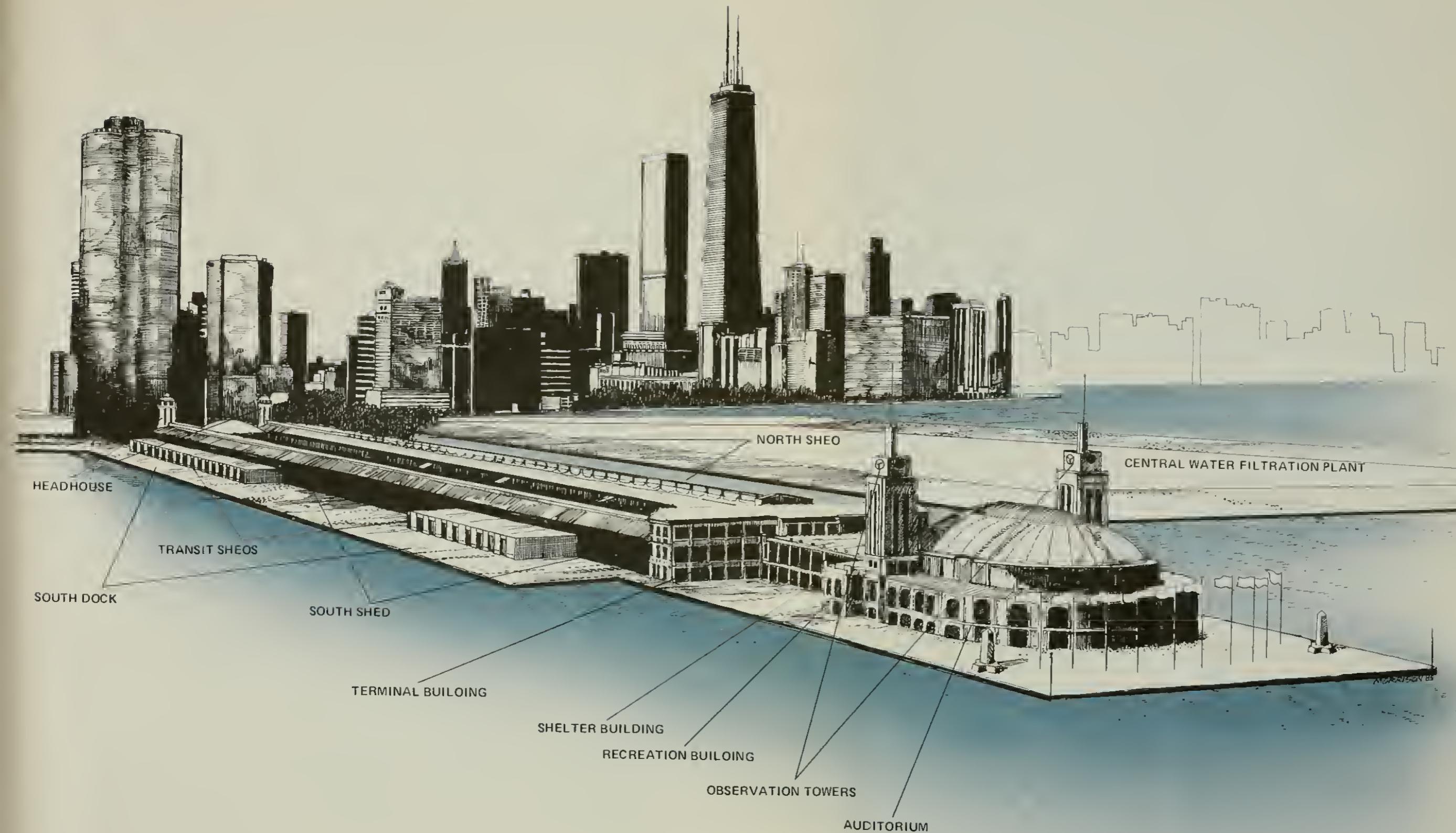
In the mid-1950s Chicago city officials began planning better port facilities for the increase in commercial activity expected to accompany the completion of the Saint Lawrence Seaway. Navy Pier went through a series of extensive rehabilitation and expansion projects, beginning in 1956 with the construction of a railroad connection to the pier's docks. This was followed by a series of projects designed to expand and modernize the dock facilities on the pier. These projects were completed in 1962 at a cost of more than \$8 million. Meanwhile, the Saint Lawrence Seaway was officially opened in 1959 during a visit to the pier by Queen Elizabeth II of Great Britain. This initiated a period of prosperity for the port that lasted until the 1970s, when newer port facilities were opened at Calumet Harbor, south of the city.

In 1974 Chicago Mayor Richard Daley announced plans to revive the recreation end of the pier. Restoration and rehabilitation work began in 1975 and continued until 1979. Meanwhile, as part of America's Bicentennial celebration in 1976, a unique solar demonstrator unit was installed on the pier to illustrate energy conservation to the general public.

In 1977 the Chicago City Council designated the pier a Chicago landmark because of the part it had played in the cultural, economic, and social history of the city. In 1979 the pier was placed on the National Register



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of Historic Places for its local significance in the areas of architecture, commerce, communications, economics, education, engineering, military, music, politics, theater, and transportation.

PREVIOUS USE PROPOSALS

Since the mid-1970s, Navy Pier has been largely unused and vacant. The rehabilitated recreation complex and portions of the sheds have been used occasionally for special events, such as Art Expo. Numerous plans for further rehabilitation and adaptive use of the pier have been proposed over the past 20 years by city and state officials, private developers, and interested citizens. The major use proposals are summarized in table 1.

CITY ORDINANCES, PLANS, AND POLICY

Lake Michigan and Chicago Lakefront Protection Ordinance (October 1973):

The Lakefront Protection Ordinance provides for the preservation of the environmental, recreational, historic, aesthetic, and cultural values of the city's lakefront and adjacent lands. The ordinance has specific goals, many of which apply to Navy Pier: to maintain and improve the purity and quality of Lake Michigan water, to ensure that lakefront parks and the lake itself are devoted only to public purposes, to expand the quality and quantity of lakefront parks, to protect and enhance vistas, and to promote pedestrian and public transportation access to and from the lake and continuous pedestrian movement along the shoreline. Navy Pier is included in the ordinance's public use zone. Special review procedures are contained in the ordinance to ensure compliance with its provisions.

Chicago Central Area Plan (November 1984): In 1980 the city began working with the Rouse Company on joint development of a mixed-use entertainment and commercial complex for the pier, but negotiations ended in 1984. The Chicago Central Area Plan, submitted by the Chicago Central Area Committee and revised by the city, describes the Rouse Company proposal and states that if Navy Pier was developed as a retail/hotel complex, annual use would exceed 16 million visitors.

To provide for a greater utilization of this historic landmark, the City has been considering a private developer's proposal to upgrade the physical condition of Navy Pier. Through a joint public/private venture, development of Navy Pier could provide such things as a visitor's center, children's play park, a maritime museum, a large slip marina, a festive shopping area, a hotel of medium size, an entertainment center, art galleries, an auditorium, and restaurants.

A major objective of this development would be to utilize a neglected asset and enhance the site's unique waterfront character. This project should also respond to important considerations of site access and parking. Proposed parking

Table 1: Summary of Use Proposals for Navy Pier

	<u>Chicago Department of Public Works (1979)</u>	<u>Morton/Barton-Aschman/Epstein (1980)</u>	<u>The Rouse Company (1980)</u>	<u>John David Mooney (1982)</u>	<u>The Pier Group (1984)</u>	<u>Illinois Department of Conservation (1985)</u>	<u>Mayor's Task Force (1985)</u>
Market	X	X	X	X	X	X	X
Theater							X
Fine art center			X	X	X	X	X
Performing arts center	X	X	X	X	X	X	X
Exhibition	X	X	X	X	X	X	X
Museum	X	X	X	X	X	X	X
Marina (N)	X	X*	X	X	X*	X	X
Marina (S)	X*	X	X	X	X*	X	X*
Auditorium							
Retail shops	X	X	X	X	X	X	X
Restaurants	X	X	X	X	X	X	X
Offices	X	X	X	X	X	X	X
Active recreation/sports	X	X				X	X
Cinema	X	X			X		
Public information	X						
Covered court/garden		X		?	X	X	X
Excursion boats						X	X
Fishing charters						X	X
Pier fishing						X	X
Courtesy docks						X	X
Restore Dime Pier					X	X	X
Parking (off pier)					X	X	X
Parking (on pier)					X	X	X
Archives/library					X		
Special events					X		
Ice-skating					X		
Children's park					X		
Health club facilities					X		
Residential units					X		
Hotel (on pier)					X		
Hotel (off pier)					X		
Casino					X**		

* Either location
** Optional

facilities on the pier could accommodate up to 2,500 automobiles and provide space for a bus turnaround. Transit access to the pier from the Loop and Near North would help to reduce parking problems. Shuttle buses to the Grant Park parking garage could improve the parking situation further. The ability to traverse almost the entire lakefront on foot and by bicycle enhances one of the city's most valuable pedestrian corridors. Convenient public access to the lakefront park system in a pleasant and reasonable manner was established as a priority many years ago--one which has been steadfastly protected by Chicago's civic leaders. Pedestrian circulation along the lakefront near Navy Pier is an important linkage between the Near North and the Loop and should be improved by expanding the pedestrian and bicycle path system along the lakefront to Grant Park.

Window on the Future: Final Report of the Mayor's Navy Pier Task Force (January 1986): The report of the Mayor's Navy Pier Task Force has been endorsed by Mayor Washington and represents the city's most recent policy statement regarding the pier. The major findings of the report are reprinted below:

Broadly, the Mayor's Navy Pier Task Force enthusiastically recommends the development of the Pier as an urban park with extensive and innovative cultural, educational and community activities. Specifically, it recommends a wide range of expositions, cultural exhibits, museums, educational institutions and entertainment events, along with limited retail activities. The task force also recommends passive and active park areas (both open and enclosed) and noncompetitive recreation facilities for year-round use. The task force envisions the Pier as a community center whose base would be the entire city of Chicago. Its programs and facilities would both serve and reflect Chicago's diverse cultural life.

The vision of Navy Pier that the task force endorses is a sharp contrast to proposals for commercial, office or residential development of the site. Many other parts of the city remain viable for these kinds of developments. There is only one Navy Pier, and it belongs to everyone.

The task force recommends making its vision of Navy Pier a reality through a natural and evolutionary process of phased development. Improvements to the Pier would be paced with the increased use of Pier facilities--a dramatic departure from previous proposals for a wholesale renovation that would have required a large, lump sum public investment at the beginning of the development.

The task force believes that efficient management of the diverse activities which could be offered on a mixed-use Pier would best be provided by a quasi-public management entity and/or by the

City with input from a public/private advisory committee, rather than by the City itself.

The task force also addressed itself to the issue of public transportation, as development of the Pier frequently has been stymied because it lacks a good system of direct transportation links to the rest of the city. The task force believes that during the Pier's initial development phase, the City can and should undertake a number of low-cost initiatives to improve pedestrian, vehicular and mass transit access to the Pier. Expanded public transit facilities might include new light rail or shuttle bus systems to link the Pier to the Loop and to commuter rail stations.

RESOURCE DESCRIPTION AND ANALYSIS

STUDY AREA

The National Park Service study area includes all of Navy Pier, the adjacent water areas, and the land area between the head of the pier and Lake Shore Drive, east to west, and between Olive Park and the Chicago River, north to south. The 37.5-acre land area includes lands owned by the city of Chicago, the Chicago Park District, and the federal government, but it excludes Lake Point Towers, a privately owned 69-story condominium complex. The existing and proposed land uses in the surrounding area and access and transportation have also been considered as they relate to adaptive use of the pier.

HISTORICAL VALUES

Navy Pier was designated a Chicago landmark in 1977. It was placed on the National Register of Historic Places in 1979 as a locally significant resource; however, the National Park Service recommends that this classification be reconsidered. Based on a brief review of the National Register "Criteria for Evaluation" (36 CFR 60.4), it appears that the pier is at least of statewide significance because of its historical impact on a multistate region. (The National Register criteria do not include a "regional" category for resources of more than statewide but less than national significance.) As described in the Reconnaissance Survey (USDI, NPS 1985), the National Park Service found that Navy Pier does not meet the prescribed criteria for national significance found in the NPS "Management Policies."

The regional significance of the pier is related to the following themes and subthemes:

Distribution of Commercial Goods. Between 1916 and 1930 Navy Pier was a major terminal for the importation and regional distribution of commercial goods. This trade was revitalized with the opening of the Saint Lawrence Seaway in 1959. During the peak years following the opening of the seaway, the newly renovated Navy Pier annually served more than 200 ships bringing goods from around the world to the midwestern region. From 1916 to the 1960s the pier played an indirect role in the distribution of goods through a number of national and international expositions, trade fairs, and conventions. The pier was an important regional support facility, but unlike facilities such as the Illinois and Michigan Canal, it did not contribute to a major shift in the economic development of the region. A major part of the Illinois and Michigan Canal went out of service in 1904, before Navy Pier was constructed; thus, the pier has no direct historical relationship to the nationally significant resources of the Illinois and Michigan Canal National Heritage Corridor.

Water Transportation. Until superseded by automobile and air transportation, lake steamers provided a major form of regional transportation for recreational and business travel. Navy Pier was the primary pier serving Chicago passengers. Limited recreational travel along the Lake Michigan shoreline continues to operate out of Navy Pier to this day.

Urban Architectural Design and Engineering. Upon its completion in 1916 Municipal Pier No. 2 was the largest of its kind in the world, and it remains the longest pier in the United States. The pier is an imposing structure with many attractive architectural features, but it does not possess exceptional characteristics in its design or method of construction. The original form and configuration of the pier have been largely preserved, although the pier has been expanded and some of the specific elements have been modified.

Higher Education. From 1946 to 1966 the Chicago Undergraduate Division of the University of Illinois served students from throughout the region at its facilities on Navy Pier. Following World War II the pier provided the space needed to accommodate the tremendous influx of returning veterans. The location of the campus near the center of Chicago also provided many students the opportunity to work while continuing their educations.

Organized Recreation. The recreation facilities included in the design of the pier were secondary to the shipping facilities, but they represented the importance placed on public access to the lakefront and the influence of Burnham and Bennett's Plan of Chicago. From 1916 until the outbreak of World War II, Navy Pier served as a major regional recreation resource. The recreation facilities at the pier's east end were all free to the public. On summer days they provided thousands of city dwellers and visitors with relief from the city's heat, humidity, and crowded environment. The pier was open from 8:00 a.m. to midnight, Memorial Day to Labor Day. Attendance at free concerts and plays, touring the latest exhibitions, dining in the restaurants, picnicking, community sing-ins, a children's playground, a merry-go-round and ferris wheel, and boat rides to the city lakefront parks were some of the popular activities. Author Ira W. Hoover captured the character of the pier's public use in 1916 by stating, "All classes, nationalities, and ages are represented in the daily thousands who gather here for recreation and relief from superheated rooms and pavements."

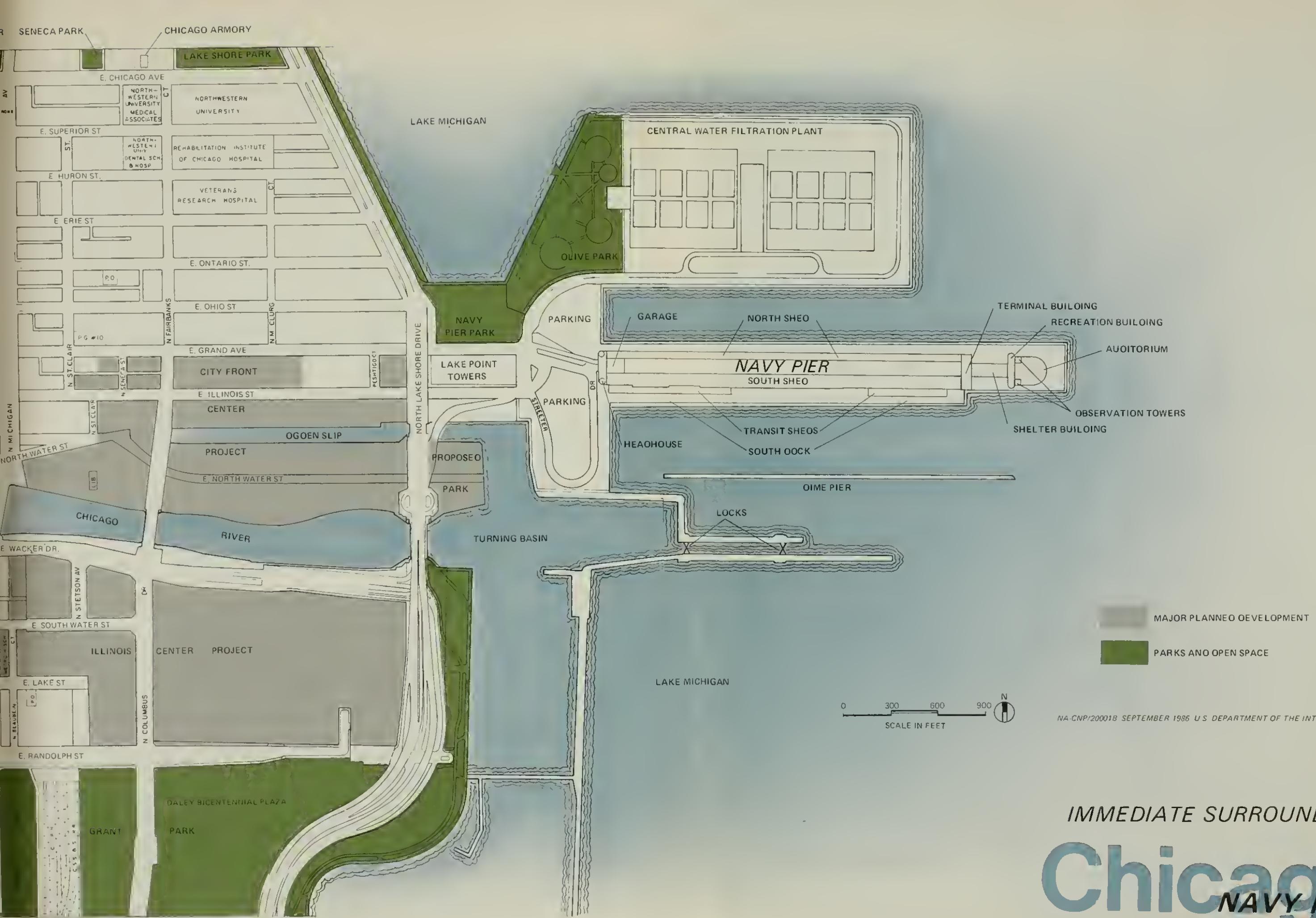
ARCHITECTURAL CHARACTER AND CONDITION

Projecting into Lake Michigan for 3,040 feet, Navy Pier commands attention because of its size and prominence on the lakefront. The pier buildings contain approximately 600,000 square feet of space visually and physically divided into three distinct architectural elements: the headhouse, the sheds, and the recreation complex. The unique character



IMMEDIATE SURROUNDINGS

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IMMEDIATE SURROUNDINGS
Chicago's
NAVY PIER

of Navy Pier emerges from the combination of ornamental Art Moderne/Romanesque Revival architecture at either end with the classic industrial appearance of the sheds.

The brick-masonry headhouse serves as the formal entrance from the western, landward end of the pier. It contains office space and pedestrian ramps providing access to the second levels of the sheds. The headhouse is currently unused, is in poor condition, and requires continual maintenance simply to keep it in a mothballed condition. A garage constructed just east of the headhouse by the U.S. Navy during World War II needs extensive structural repairs.

East of the headhouse are two parallel 100-foot-wide, 2,350-foot-long, two-level sheds constructed of concrete, steel, and glass. The sheds are separated by an 80-foot-wide open area. The lower levels of the sheds are divided by interior support columns and are best suited to uses requiring smaller partitioned spaces. The upper levels are uninterrupted by interior supports, making these spaces more versatile and conducive to activities requiring an open, flexible volume. The sheds, like the headhouse, are largely unused and require continual maintenance to prevent further deterioration. The eastern ends of the sheds are occasionally used for special events.

In the late 1950s the pier was widened on the south side by the addition of a 100-foot-wide dock that extends the length of the headhouse and shed sections. A series of one-story, flat-roofed transit sheds were constructed on the south dock at the same time, but the middle section of these sheds was later removed. The added sheds blunted the symmetry of the structure and changed the original appearance of the south side. The integrity of the sheds themselves was subsequently altered by the removal of the middle section. The expansive dock, with its sheltered southern exposure, offers excellent potential for scenic viewing, other recreational use, and circulation along the length of the pier.

The final element, at the eastern end of the pier, is the recreation complex. It starts with a three-story terminal building (44,000 square feet), which contains stairways and toilets but few other partitioned spaces. Next comes the shelter building, which links the terminal building to the recreation building and auditorium. This two-story, 220-foot-long building (36,500 square feet including the unenclosed lower level) was originally open on the north and south sides to catch the cool lake breezes, but it is now glazed on the second level to provide an all-weather walkway and exhibition space. The top floor is decked as a roof garden and observation deck, and the building is flanked on the north and south by terraced plazas with trees, lighting, and seating. The recreation building (24,000 square feet) contains stairways, toilets, and lobby areas that open onto the ballroom-like auditorium. The auditorium (43,000 square feet) is 100 feet high and 150 feet long and can seat 4,000. It is enclosed on two levels by loggia that were originally open to the exterior and glazed on the auditorium side. The second level has now been glazed on the exterior and serves as a balcony for the auditorium. Observation towers rising 165 feet are located on either side

of the auditorium. They have been closed to the public and now house heating and ventilating equipment. The auditorium is surrounded on the easternmost tip of the pier by an open plaza with flagpoles, benches, light standards, and two decorative stone monuments. The entire recreation complex was rehabilitated in 1976 and is occasionally used for special events. The four buildings in this complex require only minor repairs to ensure their long-term preservation.

The most appropriate preservation treatment for the pier is rehabilitation for adaptive use while preserving the general exterior configuration, architectural character, and setting of the structure. The uses that are best suited to the preservation of these values will be those that require the least structural change and that best maintain the exterior ornamental/industrial character of the pier. The headhouse and the east-end recreation complex contribute most strongly to the pier's architectural character and, therefore, should be altered as little as possible. Due to their length, size, and present condition, the sheds will probably require more modification to accommodate adaptive use. Their architectural character will not be adversely affected if the general building profile and exterior appearance are maintained.

With the exception of the auditorium, the interiors contain few finishes, if any, that warrant preservation. Therefore there are few interior constraints on rehabilitation for adaptive use. It is assumed that interior spaces will have to be significantly altered to implement a successful rehabilitation and adaptive use project.

Landscaping the exteriors of the pier buildings has the potential to alter the historic setting and views of the structure. Pavement treatments, low horizontal plantings, lighting, and street furnishings could create attractive spaces for people to use on the south dock, but more vertical landscape features should be restricted to the space between the sheds. General structural, mechanical, and electrical evaluations (included in appendix B) have identified a number of repairs that should be undertaken on an interim basis to stabilize the pier. Stabilization involves the repair of conditions that are causing deterioration of the building fabric or that pose potential threats to public health or safety. The required work includes repair of some roof sections and stopgap patching of others to stop leakage; repair of masonry, glazing, and doors; and removal of known hazards. A preliminary estimate of the gross cost of stabilizing Navy Pier for continued limited use for the next 18 months is \$3.6 million (see table D-1 in appendix D for an itemization of these costs).

New adaptive uses of the pier will require extensive rehabilitation of the headhouse and sheds, and they may impose additional mechanical and electrical requirements on the recreation complex. Rehabilitation costs will depend on the proposed uses and are discussed under "Adaptive Use Alternatives."

RECREATIONAL VALUES

As previously noted, Navy Pier served as a major regional recreation facility from the time it was built until the 1930s, and it is well situated to become a significant recreation resource once again. As described in the Reconnaissance Survey (USDI, NPS 1985), the pier does not currently meet the prescribed criteria for a national recreation area contained in the National Park Service "Management Policies."

The most important inherent recreational values of the pier are (1) the opportunity to link the city's northern and southern lakeshore parks, ensuring the perpetuation of a vital public lakefront corridor, (2) access on three sides to the waters of Lake Michigan, and (3) the impressive scenic views from the pier both landward and lakeward. These values are described below:

Critical Lakefront Open Space. It is important to recognize the legacy of public stewardship of the Chicago lakefront and to manage Navy Pier to maximize its public benefit, regardless of the specific activity or activities that ultimately occur on its decks. The concept of preserving the city's lakefront for public benefit, rooted in Burnham and Bennett's 1909 Plan of Chicago, remains the key to the magnificent setting the city populace enjoys.

Although the public lakefront is well protected to the north and south, there is a weak link in the central area of Chicago that is the current focus of much planning and development. Between Oak Street Beach on the north and Grant Park on the south, the public open space narrows to a tenuous thread. This public space must be maintained and enhanced to protect the integrity of the public lakeshore concept and to provide options for north-south recreation trails along the waterfront. The most critical open space linkage is the area along the lake just on either side of the locks at the entrance to the Chicago River. Within this zone, just north and east of the river, Navy Pier juts into Lake Michigan for more than half a mile. Future revitalization of the pier for recreational use will greatly enhance public access to this section of the lakefront and perpetuate the heritage of using the lakefront to promote the social and cultural well-being of Chicago residents and visitors.

Access to Lake Michigan. Navy Pier greatly extends the city's interface with Lake Michigan and intensifies its impact. To stand at the end of the pier, surrounded by water on three sides, evokes some of the same feelings as being out on the lake in a ship. The enjoyment of being on the water is one of the qualities that has helped the pier's promoters stage successful national and international exhibitions, such as Art Expo. The 3,040-foot-long docks on both sides of the pier offer excellent access to Lake Michigan for many kinds of water-related activities, including tour and pleasure boating, fishing, and the preservation and interpretation of historic ships. The pier can also help meet some of the growing demand for additional marina facilities.

Scenic Values. The city of Chicago dominates the southwest shoreline of Lake Michigan. The view of the city skyline from the lake rivals that of other great cities, including New York, San Francisco, Rio de Janeiro, Copenhagen, Honolulu, Sydney, and Hong Kong. Navy Pier is the longest man-made peninsula on Lake Michigan, and it affords one of the finest scenic views of the Chicago skyline. The pier's only rival for this scenic view is the end of the peninsula occupied by Adler Planetarium, itself a filled finger of land inspired by Burnham to symmetrically anchor the southern side of the entrance to Chicago Harbor. Views from the pier to the city are best to the southwest.

From the end of Navy Pier, particularly on a late spring, summer, or early fall day, the views are not only toward the Chicago skyline, but also lakeward across a vast expanse of sky and water dotted with sailboats and pleasure craft. On clear days the southern end of the lake, including the Indiana Dunes, can be seen. At night the east end of the pier affords a dramatic view of the myriad lights along the skyline and their reflections on the lake.

The rehabilitated east end terminal building and auditorium are impressive structures whose architecture adds to the scenic views both landward and lakeward from the pier.

Preservation of the views afforded by Navy Pier is considered essential. Development of the land area at the head of the pier must be carefully designed to avoid blocking the views or adversely affecting the historic setting of the structure.

SETTING

Immediately south of Navy Pier is the remnant of Dime Pier, and south of Dime Pier are the locks at the mouth of the Chicago River. The city of Chicago's Central Water Filtration Plant, which also extends into Lake Michigan, is located just north of Navy Pier. These features enclose the water areas considered in this study. The landward end of the filtration plant peninsula is occupied by Olive Park, which is managed by the city's water department as a semiformal landscaped area for walking and sitting along the lakeshore.

At the head of Navy Pier are approximately 37.5 acres of essentially open land under the ownership of the city of Chicago (26.5 acres), the Chicago Park District (10.1 acres), and the U.S. Army Corps of Engineers and U.S. Coast Guard (1 acre). The only nonpublic space between the pier and Lake Shore Drive is the 69-story Lake Point Towers condominium complex. Existing uses of the public lands include surface parking, open park space, and small administrative areas for the Chicago River locks, the Coast Guard Auxiliary, and the city sanitation department. At the present time there are approximately 740 off-street parking spaces provided on city and park district property at the head of the pier. Another 95 on-street spaces are available along Streeter Drive,

which circles the southern portion of this area. During some special events, parking has been permitted on the pier itself. There are an additional 7,500 off-street parking spaces in public and private lots and garages within a half mile of the entrance to the pier.

Part of Navy Pier Park, a 2.45-acre landscaped area managed by the Chicago Park District, is currently used as a construction yard, but it will be rehabilitated following the reconstruction of Lake Shore Drive.

Views from the land at the head of the pier are generally unobstructed toward the lake to the southeast, toward the shoreline and Grant Park to the south and southwest, and toward the city skyline to the southwest and northwest. The pier itself is best viewed from the lake and from the shoreline and Lake Shore Drive to the southwest. Lake Point Towers, the elevated structure of Lake Shore Drive, and the water filtration plant are visual barriers to close-in, ground-level views of the pier from other locations.

Future treatment of the land area at the head of the pier will be an important part of the revitalization project, since that area will serve as the entrance to the pier and provide the space needed for land-based support features such as parking, transit stops, and lakefront trail connections.

As previously noted, the north/south pedestrian and bicycle trails linking the lakefront parks do not currently connect in the vicinity of Navy Pier. The city of Chicago has provided for pedestrian and bicycle use of the new Lake Shore Drive bridge across the Chicago River and Ogden Slip. City plans for future development along the Chicago River southwest of the pier include a pedestrian promenade along the river's edge that will terminate in a park east of Lake Shore Drive between the river and Ogden Slip. The Illinois and Michigan Canal National Heritage Corridor Commission is preparing plans for preservation and use of the entire corridor, including some lands along the Chicago River. Combined with these other proposals, new trails through the Navy Pier site, including a connection to the narrow concrete strip between Olive Park and Oak Street Beach to the north, will ultimately link Navy Pier to the lakefront parklands and residential areas both north and south of the pier and to the Chicago River and adjacent development areas to the west.

ADJACENT LAND USE

The western edge of the Navy Pier site is bounded by Lake Shore Drive, an eight-lane highway that parallels the city's shoreline and which is an elevated multilevel structure in the vicinity of the pier. Just west of Lake Shore Drive along the north side of the Chicago River is one of the largest privately owned undeveloped tracts of land in downtown Chicago. This 48-acre property includes most of the land between Grand Avenue and the Chicago River, north to south, and between Lake Shore Drive and Michigan Avenue, east to west, plus a small peninsula east of Lake Shore Drive bounded by Ogden Slip, the turning basin, and the river.

The plan for this property is to develop Cityfront Center (formerly called the Chicago Dock Equitable Venture) with 22 million square feet of residential, retail, hotel, and office space. North of Grand Avenue in the Streeterville area, several mixed-use developments are under construction. The city has approved plans for yet another similar development, called Illinois Center, south of the Chicago River. These combined developments make the Near North area of Chicago one of the major growth centers in the region.

High-rise development associated with these projects will change the views to and from the pier, will increase the residential population in the immediate neighborhood of the pier, and will eventually require improvements to public facilities, such as sanitary sewers, streets, and transit systems. This will provide an opportunity to simultaneously improve service to the pier. Commercial parking facilities will be included to support new office and retail space, and the parking spaces closest to the lake could be available to pier visitors on weekends.

The additional residential population will increase the importance of Navy Pier as a recreation resource. This, coupled with the density of development and the continued evolution of Near North demographics to an upper-income population, could cause the pier to become, or to be perceived as, a neighborhood facility, thereby isolating it from use by all the city's residents and by tourists. Public transit and other links to the rest of the city will be critical to overcoming this potential barrier to public use.

ACCESS AND TRANSPORTATION

Vehicular access to Navy Pier is generally good except during peak hours, when Lake Shore Drive and some city streets are highly congested. Ongoing and planned street improvements to be completed by 1987 will facilitate vehicular access to the pier.

Lake Shore Drive, a limited-access highway, carries traffic headed to the pier from the north and south. New ramps to and from Lake Shore Drive will connect with Illinois Street and Grand Avenue, which in turn will lead directly to and from the pier. Provision has also been made for northbound traffic to directly access Navy Pier.

East/west access to Navy Pier is provided by Grand Avenue and Illinois Street. Both of these arterial streets pass under Michigan Avenue and Lake Shore Drive. According to city plans, they will be improved and converted to a one-way pair to facilitate traffic movement in the expanding Near North area. Illinois Street will be signed one-way eastbound, and immediately east of Lake Shore Drive, a lane could be added to provide direct access to a pier parking area. Ohio and Ontario Streets (arterials immediately north of and parallel to Grand Avenue) also provide east/west access to the general area of the pier. Both streets cross Michigan Avenue at grade and form the distributors to the Kennedy Expressway ramps to the west.

An extensive regional transit system converges on the central area of Chicago not far from Navy Pier; however, the pier remains isolated from this system for the lack of local linkages. Regional transit service is provided by Regional Transit Authority (RTA) commuter rail and buses and by Chicago Transit Authority (CTA) subways, elevated trains, and buses. Neither transit system provides rail or subway service into the Near North area where Navy Pier is situated. Consequently, passengers riding RTA commuter rail and CTA rapid transit must transfer to one or more of the bus routes to reach Navy Pier by public transportation. The RTA rail passengers transfer to the CTA system at one of the downtown rail terminals south and west of the pier. The nearest CTA rail is a north/south subway under State Street with a station stop at Grand Avenue, slightly less than a mile from Navy Pier.

Two bus routes enter the pier area via Grand Avenue. Both routes serve the CTA subway station at State Street and Grand Avenue and also intersect a number of other bus and rail lines in the central area to the west and south. Three additional bus routes serve the area north of the Chicago River and east of Michigan Avenue but do not reach Navy Pier.

The major disadvantage of bus service, compared to rail or subway, is slow travel time because buses must share the roadways with heavy automobile traffic.

Based on transit origin and destination data included in a 1985 downtown transit study (De Leuw Cather & Company), the greatest unmet demand for transit is between the central area west of the South Branch of the Chicago River (specifically the Chicago and Northwestern and the Union commuter rail stations) and the Near North (specifically North Michigan Avenue). The planned large-scale development in the Near North area will further increase the demand for internal public transit. By the year 2000 approximately 20 percent of all the internal transit trips in the city's central zones will occur in that area. Demand will also increase for public transit linkages between the Near North and the city's central transportation terminals. On the one hand, transit improvements to meet this demand could generally improve service to Navy Pier. On the other hand, unless the pier is directly served by the transit system, the scale of development and the demographic changes projected for the Near North could further isolate the pier from the rest of the city, as previously noted.

Anticipating the large-scale development of Cityfront Center, the Chicago Department of Planning has formulated development guidelines proposing short- and long-range improvements to circulation and transit service for the Near North area. These proposals, along with findings from the downtown transit study and information provided by the Chicago Transit Authority, are summarized here. Increasing transit needs in the Near North will be met in the short term by expanding bus service and by using other traffic management techniques, such as dedicating streets for bus traffic only. Over the long term, because of growth and associated vehicular congestion, there will be a need for high-speed, convenient fixed-guideway transit service linking the Near North with the major transportation terminals and activity centers in the central area.

Recent studies have focused on three options for serving the Near North area. In the first option, the Chicago and Northwestern Railroad right-of-way (West Carroll Avenue and North Water Street) would be used for an exclusive bus route in the short term and for a fixed-guideway transit route over the long term (see the Transit Service map). West Carroll Avenue parallels the north bank of the Chicago River and passes under cross streets. This alignment would eliminate most traffic congestion. The western terminus of this route would be at North Canal Street, which provides access to the Chicago and Northwestern and Union commuter rail stations.. The eastern terminus would be in the Cityfront Center.

A second potential transit corridor (also on the map) would go east from the commuter rail stations along Monroe Street (or one of several streets parallel to Monroe Street) to the Illinois Central commuter rail terminal near Grant Park (Randolph Street station). The route would then proceed north immediately west of Columbus Drive, cross the river, and follow a Columbus Drive/North Fairbanks corridor. A station would be located within or near the Cityfront Center.

A third potential transit corridor would parallel the Columbus Drive/North Fairbanks corridor north of Monroe Street, but instead of serving the commuter rail stations west of the Chicago River, it would proceed south along the existing rail corridor. The downtown transit study determined that the other two corridors would provide better transit service to the central area of the city.

Transit service to the pier should be an extension of the planned CTA service, whichever corridor is ultimately selected. Circulator routes from the potential transit corridors have not yet been located, but they would probably be extended eastward along the Grand Avenue/Illinois Street one-way pairs to Navy Pier, westward along these streets to State Street and beyond, and northward toward activity centers such as the Hancock Center and the Northwestern University Medical Center. Specific alignments and fixed guideway or subway profiles are still under study. Possible types of fixed guideways are the CTA-type of rail rapid transit (RRT); light rail transit (LRT), including streetcars; and automated guideway transit (AGT), which does not require drivers.

The downtown transit study indicated that the most probable solution to serving the pier would be elevated AGT or surface LRT, and it included capital costs for the various transit types and alignments. The alignment from Union Station to Navy Pier by way of the West Carroll Avenue and Grand Avenue/Illinois Street corridor (a total of 1.9 miles) was estimated by De Leuw Cather & Company to cost \$70 million for surface LRT and \$171 million for elevated AGT. These are 1985 costs including all system and vehicle costs plus a contingency of 25 percent.

A transit station located at Columbus Drive/North Fairbanks and Grand Avenue/Illinois Street in the Cityfront Center would be slightly more than half a mile from the Navy Pier headhouse. If system costs along the 1.9-mile route were similar, the extension from the proposed station to

Navy Pier would cost approximately \$19 million for an LRT system and \$47 million for an AGT system. This extension would serve not only Navy Pier but all development east of Columbus Drive, including Cityfront Center and Lake Point Towers.



Y PIER

(FOR PUBLIC CIRCULATION ON PIER)

NUMBER 1986, U.S. DEPARTMENT OF THE INTERIOR/NATIONAL PARK SERVICE

EXISTING RAIL TRANSIT LINES

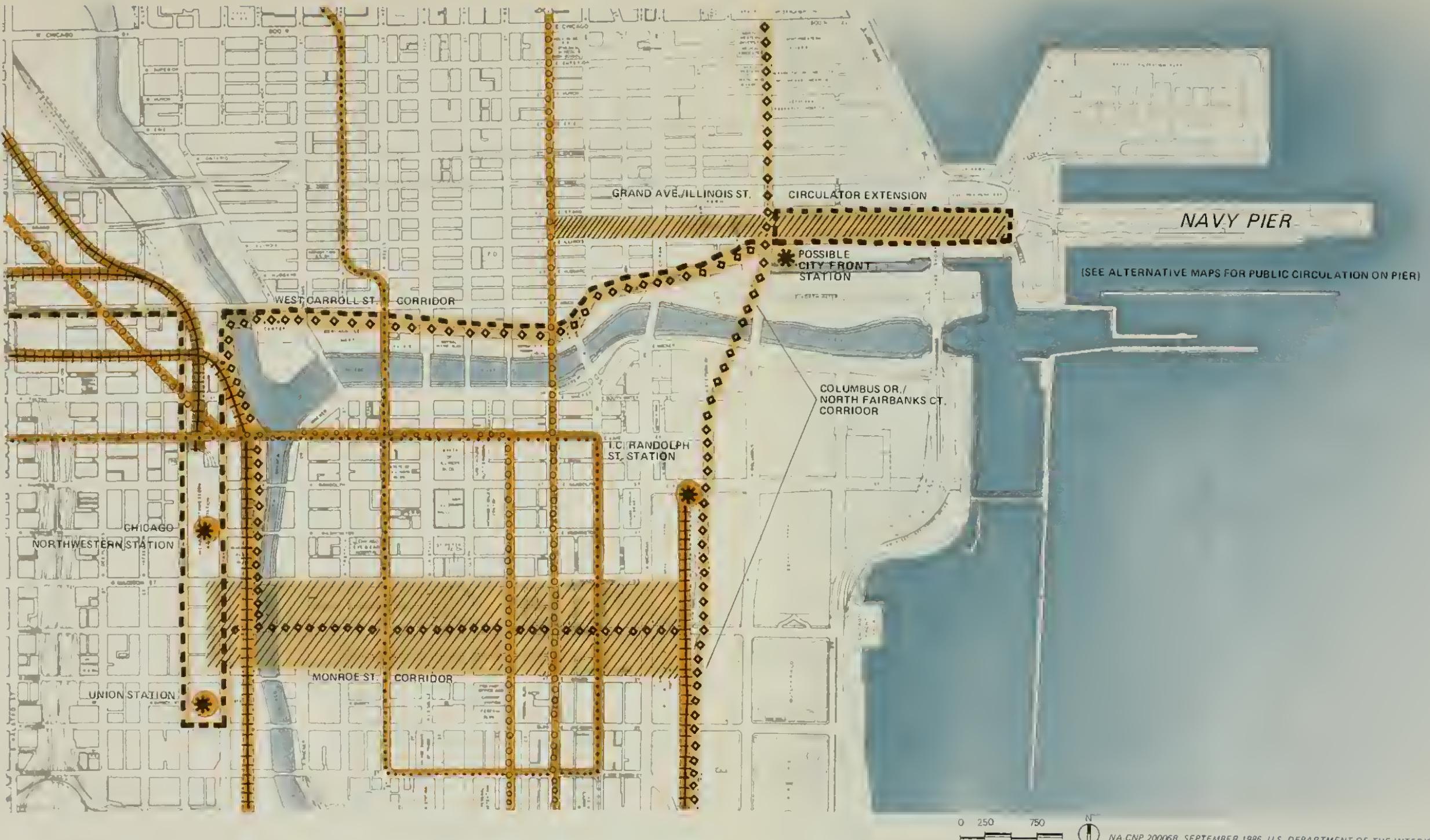
- REGIONAL TRANSIT AUTHORITY CO.
- CHICAGO TRANSIT AUTHORITY RRT
- CHICAGO TRANSIT AUTHORITY RRT
- TRANSIT STATIONS

POTENTIAL ADDITIONAL TRANSIT SERVICES

- SHORT RANGE BUS
- LONG RANGE FIXED GUIDEWAY ALIGNMENTS/CORRIDORS
- POSSIBLE TRANSIT STATION

TRANSIT SERVICE

Chicago's
NAVY PIER



TRANSIT SERVICE

Chicago's
NAVY PIER

PART TWO:
ASSESSMENT OF ALTERNATIVES



PLANNING PERSPECTIVE

For nearly 20 years, the question of what to do with Navy Pier has been discussed by government agencies, by citizen and business organizations, and in various articles and public forums. The pier's vast size, strategic location, and unique character give it extraordinary potential for a wide variety of uses, as demonstrated by the many imaginative proposals that have been advanced. Given the magnitude of the capital investment required to rehabilitate the pier, these same factors have made the decision extremely important and very difficult.

As a preliminary step in formulating adaptive use and management alternatives, representatives of the National Park Service, the Mayor's Navy Pier Task Force, the Chicago Departments of Economic Development, Planning, Public Works, and Cultural Affairs, the Illinois Departments of Conservation and Transportation, and the Illinois Historic Preservation Agency, meeting in Chicago in December 1985, agreed to a set of revitalization goals for the Navy Pier project. Basically, the goals recognized Navy Pier as a significant regional landmark that should be managed to enhance its recreational and cultural values for the benefit of the public. This approach reflected specific direction from the U.S. Congress that the pier be studied as a recreational and cultural park, and it reinforced the recent city and state interest in public use of the pier. The goals agreed to for this study were as follows:

Preserve the historical values and architectural character of the pier through rehabilitation and compatible adaptive use.

Preserve and enhance the recreational values of the pier by maintaining or expanding lakefront open space, scenic views, and public access to Lake Michigan and its shoreline, and by encouraging maximum daily and year-round use through a variety of activities, facilities, and services.

Preserve the natural values of the pier's environment by protecting or improving water quality, air quality, and greenspace.

Integrate a revitalized pier with adjacent land use by providing efficient access to the pier, by improving the diversity of activities in the area, and by minimizing adverse effects on local businesses and residents.

Protect the broad public interest in the pier by ensuring equal access for all city residents and visitors, by providing appropriate opportunities for private investment and provision of services, by generating revenue at the pier to substantially offset government operational costs, and by efficiently administering the pier.

The broad consensus represented by these goals helped focus the attention of the intergovernmental study group on the most feasible and mutually agreeable options for the future use of the pier. Even within

this narrower view, the group identified many activities, and combinations of activities, that could be accommodated on the pier. It also identified many complex technical and public policy considerations that ultimately must be addressed. Given the brief time allowed for this phase of the study, it was not considered feasible to develop the optimum mix of uses for the pier, or to suggest solutions for all the issues and questions pertinent to the ultimate decision. Instead, the group developed a series of alternative recreational and cultural use concepts and management structures for Navy Pier, which are described and analyzed under "Adaptive Use Alternatives" and "Public Management Alternatives" in this document. These alternatives were intended to provide a framework for evaluating use of the pier as an urban park.

ADAPTIVE USE ALTERNATIVES

INTRODUCTION

The adaptive use alternatives described in this section were developed around three broad themes. The themes reflect Navy Pier's historical, recreational, and cultural values and its prominent location on the downtown Chicago lakefront, at the commercial and transportation center of the Midwest and the gateway to the Great Lakes. Each theme was used as an organizing principle for selecting a specific mix of adaptive uses and activities and a corresponding architectural concept and transportation plan.

While each alternative is a functional concept, it was not intended that any one of them be adopted in full to the exclusion of all other possible uses or combinations of uses. Rather, the alternatives were intended to demonstrate the range of recreational and cultural activities that could be included in an urban park at Navy Pier.

Like the adaptive use options, the options for access and transportation could be exchanged among the alternatives so long as adjustments were made to ensure architectural compatibility. The ultimate selection of an on-pier transit system will be greatly influenced by the type of transit developed for the Near North area and the potential for extending it to the headhouse or onto the pier. Transit costs were developed only for on-pier systems. Although the provision of transit service to the pier was considered critical to a successful operation, it was assumed that the Chicago Transit Authority would meet this need as part of its planned transit improvements to serve Cityfront Center and other Near North developments.

COMMON ELEMENTS

All of the alternatives contain common elements that the study participants agreed were important to achieving the goals they established for the rehabilitation and public use of the pier. First, all of the historic pier buildings are retained under each alternative. No structural modification of the headhouse or the buildings in the recreation complex is proposed. Each alternative calls for some modification of the shed structures to accommodate various adaptive uses, but the mass, configuration, and general appearance of the sheds is maintained.

The badly deteriorated garage structure near the headhouse is removed in each alternative. The transit sheds on the south dock are also removed. These sheds have already been altered by the removal of the middle section; they contribute little to the overall character of the pier; and they severely limit the space available for public use of the south dock. In all alternatives the south dock is cleared of these miscellaneous structures and treated as an outdoor promenade, taking full advantage of the sheltered open space and excellent views of the lake and the Chicago

skyline. The plazas around the east-end recreation buildings are also retained for outdoor activities. The option of dismantling a large portion of the shed structures to create more open space on the pier was considered by the study group but determined to be undesirable because of impacts on the architectural character of the pier and because it would diminish the pier's potential to support a variety of year-round public uses.

The specific treatment of the courtyard between the sheds varies among the alternatives, but at least some portion of this area is used as a public plaza in all three plans. Also, to promote year-round use of the pier, at least some of this space is enclosed.

Although the specific building uses change in each alternative, some uses are included in all of them, as follows:

Special events--The pier is a highly desirable setting for special events, and such events are an important source of revenue. Consequently, more than 300,000 square feet are allocated for special events in each alternative. The auditorium and the recreation, shelter, and terminal buildings are consistently retained for special event use.

Museums--The expansive spaces on Navy Pier are well suited to museum exhibitions, and depending on the significance of the collections, museums may be a major visitor attraction. Consequently, museums are a common feature of all the plans. The museums are seen as a way of carrying out the themes established for each alternative while meeting some of the space needs of various Chicago institutions. They are intended to complement, rather than compete with, the existing Chicago museums and their collections. The amount of space allocated for museums ranges from 117,000 square feet in the Chicago Cultural Park to 270,000 square feet in the Midwest Heritage Park.

Marina--A 400-slip marina is included in each alternative to help meet the demand for boat slips and to generate revenue. Transient slips for boating visitors to Chicago are included in the marina, and provision is also made for short-term courtesy docking.

Tour and charter boats--Dock space for tour and charter boats is included to provide boating opportunities for a wide cross section of visitors.

Fishing--Access to the water's edge for fishing and general sightseeing is a major feature of all the alternatives. All alternatives include the reconstruction of Dime Pier to expand opportunities for public use of the lakefront.

Food service and retail sales--Food outlets and a limited amount of retail space are included in each alternative to support visitors using the pier and to generate revenue. Food service ranges from inexpensive fast-food courts to more expensive restaurants, providing many options for dining on the pier. Retail sales are intended to carry out the park themes by providing goods that visitors will use at the pier (such as sporting goods or art supplies) or that they will keep as reminders of their visit (such as museum replicas or other souvenirs). Retail space is placed near the transit stops, with total space allocations ranging from 38,000 square feet in the Great Lakes Park to 68,000 square feet in the Chicago Cultural Park.

Visitor services--Space in the headhouse is reserved for greeting visitors, orienting them to pier activities, and providing restrooms, first aid, and other basic services.

Administration and maintenance--Additional space near the entrance is reserved for administrative offices and maintenance shops. Building maintenance is placed on the first level, and a shop to support the on-pier transportation system, if needed, is placed on the second level near the transit system. Offices are placed in the second and third stories of the headhouse.

The same set of basic assumptions about access and transportation were used in developing all the alternatives. Based on information provided by Barton-Aschman Associates in their 1981 transportation study of the pier, it was assumed that 45 percent of visitors would arrive by transit, 40 percent by automobile, 10 percent by taxi, and 5 percent by walking or bicycling. Some of the land west of the headhouse is designated for parking garages in all alternatives. The number of spaces ranges from 1,600 to 2,500, depending on the projected total visitation. These parking spaces are intended to serve the number of persons expected to drive to the pier on all but the heaviest use days in summer (refer to appendix C for a discussion of parking demand).

In the absence of a definite proposal about the kind of transit system the Chicago Transit Authority will ultimately extend to the pier, the alternatives cover a range of options for connecting off-pier and on-pier transit systems. A different form of on-pier transit is considered in each alternative, including automated guideway transit (AGT), light rail transit (LRT), and moving walkways. Also, several different locations are considered for the on-pier transit corridor. None of the alternatives includes a permanent transit corridor along the south promenade. It is anticipated that interim on-pier transportation may be provided by rubber-tired buses using either the south promenade or the second level of the north shed; however, the south promenade is not seen as a desirable long-term transit corridor because such use would obstruct views of the historic ships, the lake, and the city skyline and also conflict with pedestrian movement and access to the lake.

As indicated by these common elements, all the adaptive use alternatives involve a mixture of cultural and recreational activities supported by limited commercial services and a compatible system of access and transportation. The features that make each alternative unique are included in the following descriptions.

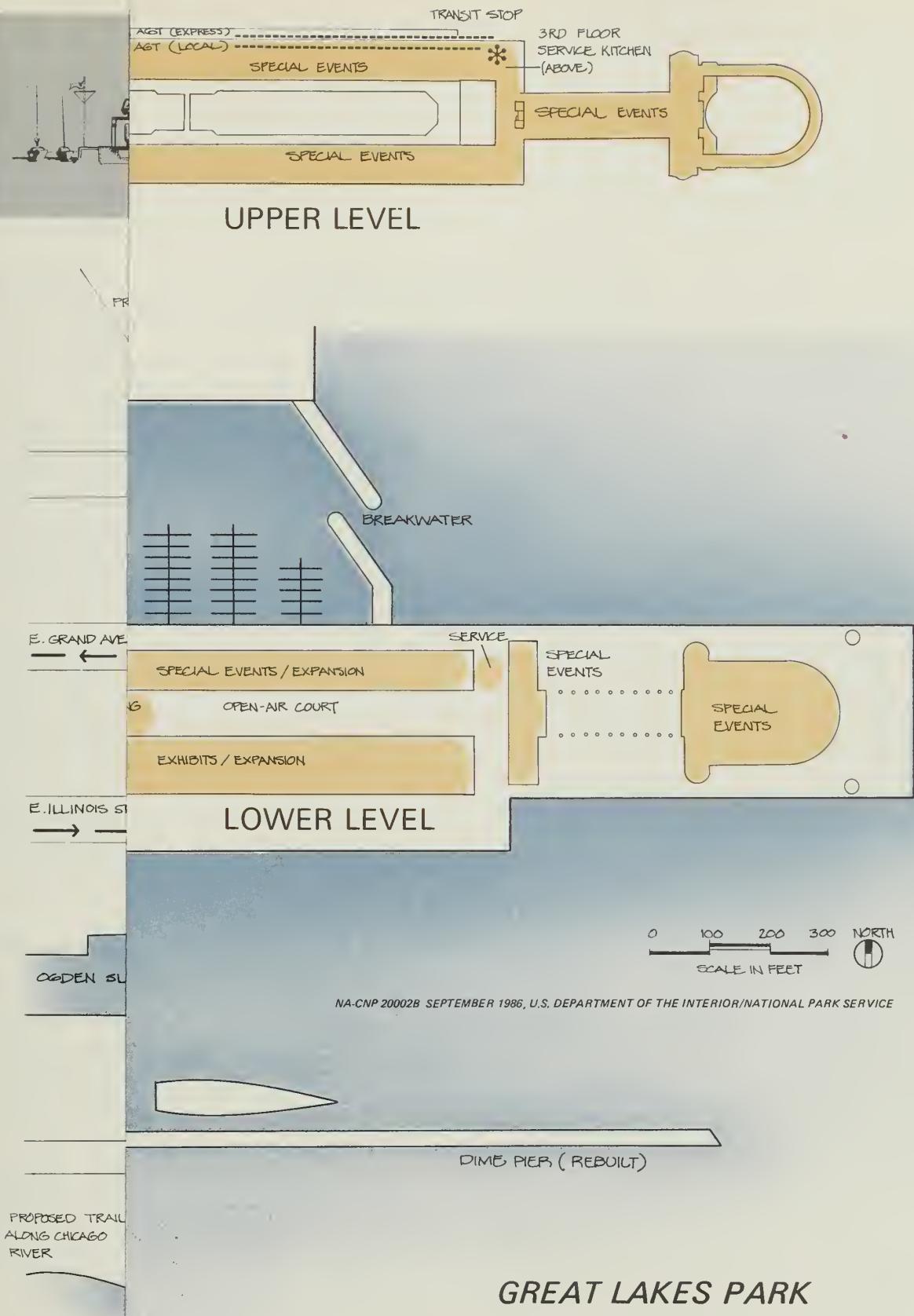
GREAT LAKES PARK

The Great Lakes Park focuses on the pier's lakefront setting and on the role Lake Michigan and the other Great Lakes played in the region's natural and human history. Under this alternative, the pier would be treated as a gateway to Lake Michigan, providing a variety of water-related recreational and educational opportunities. A marina and docks for fishing charters, tour boats, and historic ships would evoke a nautical theme that would be carried out in the commercial establishments, including an on-ship hotel. A maritime museum and related collections from other area museums would interpret the natural and cultural history of the Great Lakes. Water would be brought onto the pier in fountains and pools for visual interest and year-round swimming and water play.

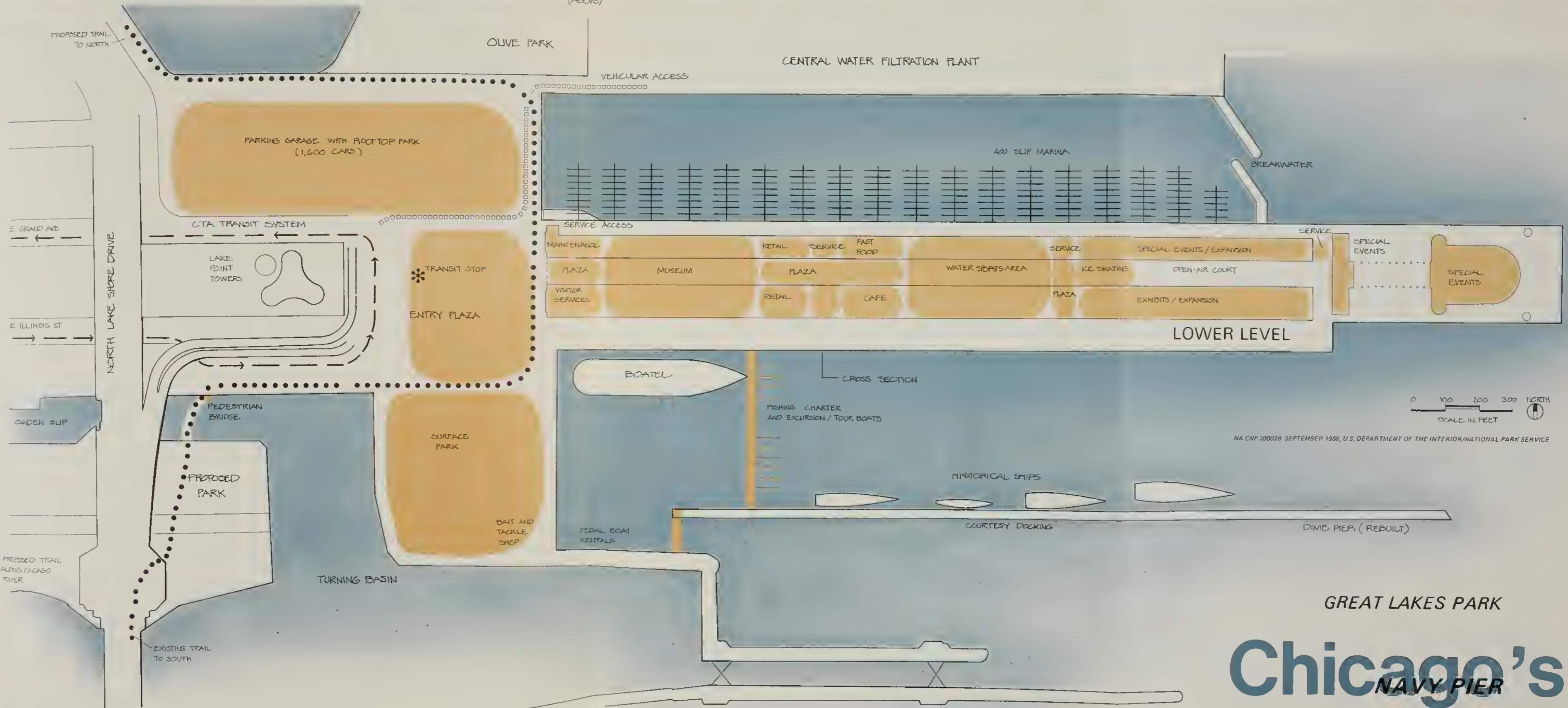
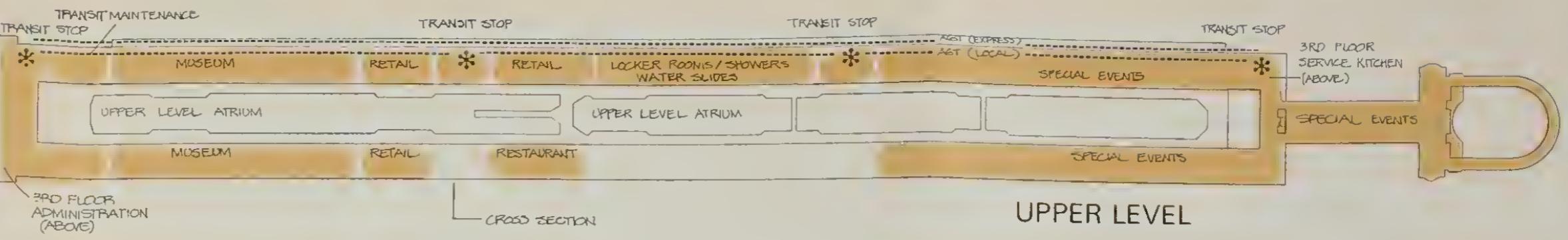
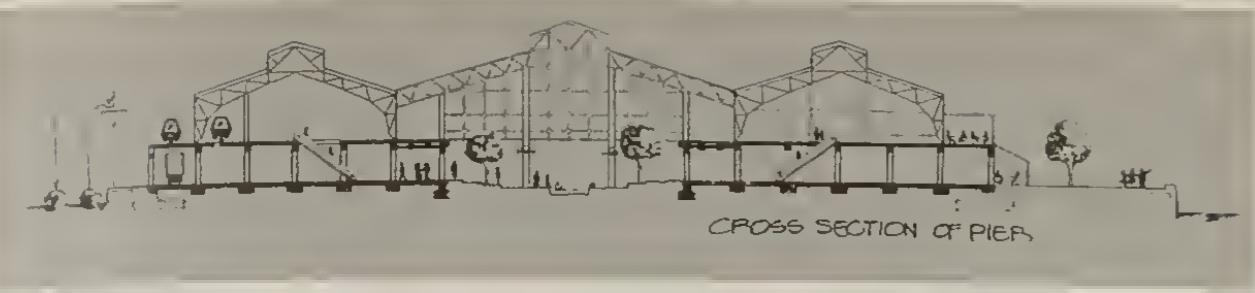
Site Development and Architectural Concept

The land at the head of the pier would be converted to a broad landscaped entry plaza flanked by a large surface park to the south and an elevated park covering a parking garage (much like Daley Bicentennial Plaza) to the north. The parking garage and pedestrian/bicycle trails would lead visitors to the entry plaza, and the CTA system would stop there, providing public transit access from the rest of the city. From the entry plaza visitors would enter the open courtyard of the headhouse building, then either pass through the visitor service area, enter directly into the museum complex, or take an escalator or elevator to the second level, where they could board an on-pier transportation system (see the Great Lakes Park map).

The activity areas in the sheds would be divided roughly into thirds by two wide plazas. Escalators and elevators would provide access between the two levels at these locations, and the second-level transit system would stop at each plaza. The plazas would be enclosed in glass, and they would cut through the south shed structure to open up views of the lake and access to the south promenade. Landscaping, pavement treatments, and site furnishings would create parklike settings in these plazas and in the connecting portion of the long central courtyard between the north and south sheds. The western two-thirds of the courtyard would be enclosed at the second-story roofline to create additional weather-controlled space for the museums, food court, and indoor water recreation area. The floor and portions of the walls of the south shed would be removed to accommodate the pools and water slides in the center of the pier and to open views to the south. The eastern third of the courtyard would remain open and would be used as an exhibit plaza during summer special events and for ice-skating in winter.



Chicago's NAVY PIER



Chicago's NAVY PIER

Dime Pier would be directly connected to the south promenade of Navy Pier. The connecting pier would enclose a small calm-water lagoon between the two piers.

On-Pier Activities

Museums. A block of museums just east of the headhouse would take advantage of the pier's location on Lake Michigan to interpret water-related themes. A new maritime museum would focus on the role of lake navigation in the exploration, settlement, and commercial development of the Great Lakes region, highlighting Chicago's evolution as an inland port. Other collections with a Great Lakes theme would be provided by existing area museums, allowing visitors to explore many facets of the natural and cultural significance of the lakes. The museums would incorporate the two-story enclosed space between the sheds, allowing for large exhibits, possibly including boats. Interesting spaces for oversized exhibits could also be created by cutting through the floor of the second level of the sheds. Historic ships associated with the museum would be anchored along the north side of Dime Pier, with access from the museum along the connecting pier from the south promenade.

Indoor Water Recreation Complex. Active year-round recreation for Chicago residents would be provided by a water recreation center in the middle of the pier. Swimming and wading pools and two-story water slides would be surrounded by landscaping to create a tropical setting. Lockers and showers would be available.

Retail Shops and Restaurants. A limited number of retail shops would offer nautical or marine-related gift items and supplies to people using the marina and other facilities. Additionally, a bait and tackle shop and small convenience store would be situated on the land just west of Dime Pier.

Visitors could choose from four food outlets. A fast-food court would be located in the south shed directly across from the retail shops. A parklike central eating area would occupy a portion of the enclosed space between the sheds. A cafe next to the food court would open onto the south promenade in the summer to offer patio cocktails and dining, and a second-level restaurant would overlook the south promenade and the historic ships berthed at Dime Pier. There would also be a public coffee shop on the ship hotel, described below.

Special Events. The eastern third of both levels of the north and south sheds, as well as the terminal, shelter, and recreation buildings and the auditorium, would be available for special events, including expositions and festivals. It is anticipated that some of the shed space might eventually be used for expanding permanent pier activities, thereby reducing the space available for special events.

The portions of the sheds used for special events would be open spaces with movable partitions, and they would be heated or air-conditioned only

when they were being used. The most appropriate special events for the pier would be those that were oriented to the general public. The pier would not be intended to compete with McCormick Place for major trade shows or other highly commercial events. The first level of the south shed would be reserved for long-term exhibits intended to last for six months to a year, while a much more rapid turnover would be expected in the remaining spaces.

A service kitchen on the third floor of the terminal building would be available to persons staging special events, and a smaller food distribution area in the south shed would support vendors serving special events or providing a winter concession for ice skaters.

The space between the sheds would not be enclosed in this portion of the pier unless a future adaptive use required it. One possible future use for this space could be a glass-enclosed conservatory. Perhaps one of the Chicago Park District's two conservatories could be relocated to Navy Pier, and the existing facility could be used as a greenhouse nursery. A conservatory on Navy Pier would be especially inviting in mid-winter. An aviary containing birds native to Illinois and the Great Lakes region could be located within the same structure.

Off-Pier Activities

Marina. A 400-slip marina would be built between the pier and the water filtration plant. To provide security for the filtration plant, there would be no marina access from that side of the harbor, and all the slips would be attached to the north side of Navy Pier. Slip space would be leased to the public on an annual basis. A fuel dock and sanitary dump station would be provided. Fifty slips in the marina would be reserved for transient boats. Short-term courtesy docking would be accommodated on the south side of Dime Pier.

Charter and Tour Boats. Docking space for fishing charter and tour boats would be provided along the east side of the connecting pier linking Navy and Dime piers.

Nonmotorized Boating and Fishing. Pedalboats would be rented for use in the small lagoon between the two piers. Fishing would be expected to be a popular activity on reconstructed Dime Pier.

Overnight Accommodations. In keeping with the nautical theme, overnight accommodations would be provided on a ship, or "boatel," which would be permanently docked along the west end of the south promenade, in the protected lagoon formed by the connecting pier between Navy and Dime piers. The facility would have approximately 100 rooms and a coffee shop.

Access and Transportation

One major three-level parking garage with 1,600 spaces would be built northwest of the headhouse and north of Grand Avenue, partially on Navy Pier Park land. Open space would be retained between the marina and the parking structure for visitor use and circulation. The first 1½ levels of the garage would be built below grade, and the structure would be topped with a rooftop park. A pedestrian walkway would connect Olive Park with the new park on top of the garage.

The surface park south of the entry plaza would be connected with the parkland at Cityfront Center by a new pedestrian bridge over Ogden Slip. From there pedestrians and bicyclists would have access to the pedestrian and bicycle lanes that are being built on the intermediate level of the Lake Shore Drive bridge over Ogden Slip and the Chicago River.

The on-pier public transit system would be a high-capacity AGT system. An AGT system requires less space than an LRT system and could be accommodated in a relatively narrow corridor in the north shed, leaving the interior courtyard free for pedestrian circulation and other activities. The system would start in the headhouse and run along the north portion of the second level of the north shed to a point just west of the terminal building. The vehicles would operate on two parallel tracks. The vehicle on the inside track would stop above each of the two main transit plazas as well as at the headhouse and terminal building. The vehicle on the outside track would provide an express service from the headhouse to the east-end terminal building. Two of these express vehicles would operate during the peak use periods. The outside track would be installed outside the north shed, but the stations at each end would be covered. Until the system was installed, public transportation could be provided on an interim basis by small buses operating along the same route or on the south promenade.

Service access to the pier would be provided along the lower deck of the north shed, connecting to maintenance and service areas near the headhouse, at the two plazas, and at the terminal building.

Public transportation to the pier from other parts of the city would be provided by extending one or more of the CTA routes to a stop just west of the headhouse. Walkways from the transit stop would direct visitors through the headhouse and up escalators to the second level of the north shed, where they would catch the on-pier transit vehicles.

Development Costs and Phasing

The total capital costs of implementing the Great Lakes Park alternative are listed in table 2. These are order-of-magnitude estimates based on the square footage costs of work performed on other similar projects under federal contract. The estimates are itemized in detail in tables D-1 through D-3 in appendix D. They include the cost of stabilizing the pier (as described under "Architectural Character and Condition") and of

repairing the infrastructure (sewage system, pier substructure, building structural systems, etc.) to bring the entire pier to a usable condition. This work would be required regardless of the ultimate adaptive use of the pier. The estimated gross cost of stabilization is approximately \$3.6 million, and the gross cost of infrastructure repairs is approximately \$116.3 million.

The capital investment could be spread over a period of ten years by accomplishing the construction in three phases. The phasing scheme included in table 2 represents a logical development sequence that would allow for some revenue-generating uses (marina, special events) in the earliest years of redevelopment. Construction of visitor service facilities, development of an interim shuttle bus transit system, and improvements to the south dock were also scheduled early to encourage immediate public use of the pier. The specific items included in each phase are listed in table D-5 in appendix D.

Table 2: Development Costs and Phasing, Great Lakes Park

	Net Construction Costs	Gross Costs*
Phase 1 (years 1-3)	\$ 66,986,000	\$ 93,780,000
Phase 2 (years 4-7)	111,352,000	155,893,000
Phase 3 (years 8-10)	<u>10,685,000</u>	<u>14,959,000</u>
Totals	\$189,023,000	\$264,632,000
Possible additional costs (atrium and conservatory)	\$ 18,000,000	\$ 25,200,000

*Includes additional costs for design, construction supervision, and contingencies; see appendix D.

Operations

The estimated annual public costs for operations and maintenance under this alternative would be approximately \$4.9 million once the pier was completely operational. These costs were not computed for the activities that would be expected to be operated by tenants, such as museums and retail space. An itemized breakdown of the public costs is provided in table D-6 in appendix D.

It is estimated that an annual rental revenue of \$4.9 million would be available to the pier's managers to offset annual operation and maintenance costs once the pier was completely operational. The sources of this revenue are itemized in table D-7 in appendix D. An estimated additional \$2.0 million in annual sales tax revenues could be returned to the pier to help retire the public debt.

MIDWEST HERITAGE PARK

The Midwest Heritage Park takes advantage of the pier's location in the commercial center of the Midwest to tell the story of the growth and development of America's heartland, emphasizing the history of industry, transportation, and commerce in the region. In the Smithsonian Institution's national collections, there may be industrial artifacts related to the settlement and development of the Midwest that could be brought to Navy Pier and exhibited in a facility operated by a Chicago museum. Existing local museum collections and additional artifacts that might be donated by private corporations would also be exhibited. Such a museum would be expected to attract visitors from all over the Midwest region, and perhaps from beyond the region. Complementary uses of the pier would carry out the midwestern heritage theme, and architectural treatment under this alternative would emphasize preservation of the pier's historical character.

Site Development and Architectural Concept

In keeping with the heritage theme, the historic trolley system would be restored for on-pier transportation. One option would be to make this an extension of the CTA system that would travel east to the pier, ascend to the second level of the headhouse, travel around the trolley decks above the courtyard between the sheds, then descend back to the street level and proceed west along the Illinois Street/Grand Avenue corridor (the transit system is described in greater detail under "Access and Transportation," below). To allow for the reconstruction of the historic trolley ramp, the entry plaza would be smaller in this alternative than in the Great Lakes Park. A small surface park would be created along the shoreline north of the trolley ramp, and it would serve as a buffer between the marina and the activity in front of the headhouse.

Two parking garages would be constructed, one northwest and the other south of the entry plaza. A rooftop park would cover the garage south

of the entry plaza. No rooftop park would be added to the north garage, since it would be adjacent to Lake Shore Drive and would be more closely aligned to the highway than the pier. Most pedestrians and bicyclists would approach the pier by way of a trail over the turning basin that would tie into the rooftop park south of the entry plaza then descend to the plaza level. From the plaza, people would walk through the headhouse, then either enter the visitor service area, proceed to an interior courtyard linking the first-level activity areas, or ascend to the second level, where they could access the trolley system (see the Midwest Heritage Park map).

All the pier activity areas on the first level would open onto a long interior courtyard, which in this alternative would be enclosed along its entire length at the first-story roofline, leaving the trolley decks open above. The covered courtyard would be treated as a landscaped, climate-controlled pedestrian plaza. As in the Great Lakes Park, the shed space would be divided roughly into thirds by two shorter intersecting plazas opening onto the south promenade. The trolleys would stop above each plaza, and passengers could either enter the activity spaces on the second level or descend to the first level courtyard.

Dime Pier would be reconstructed and connected to the mainland, but no direct link would be provided between Dime and Navy piers.

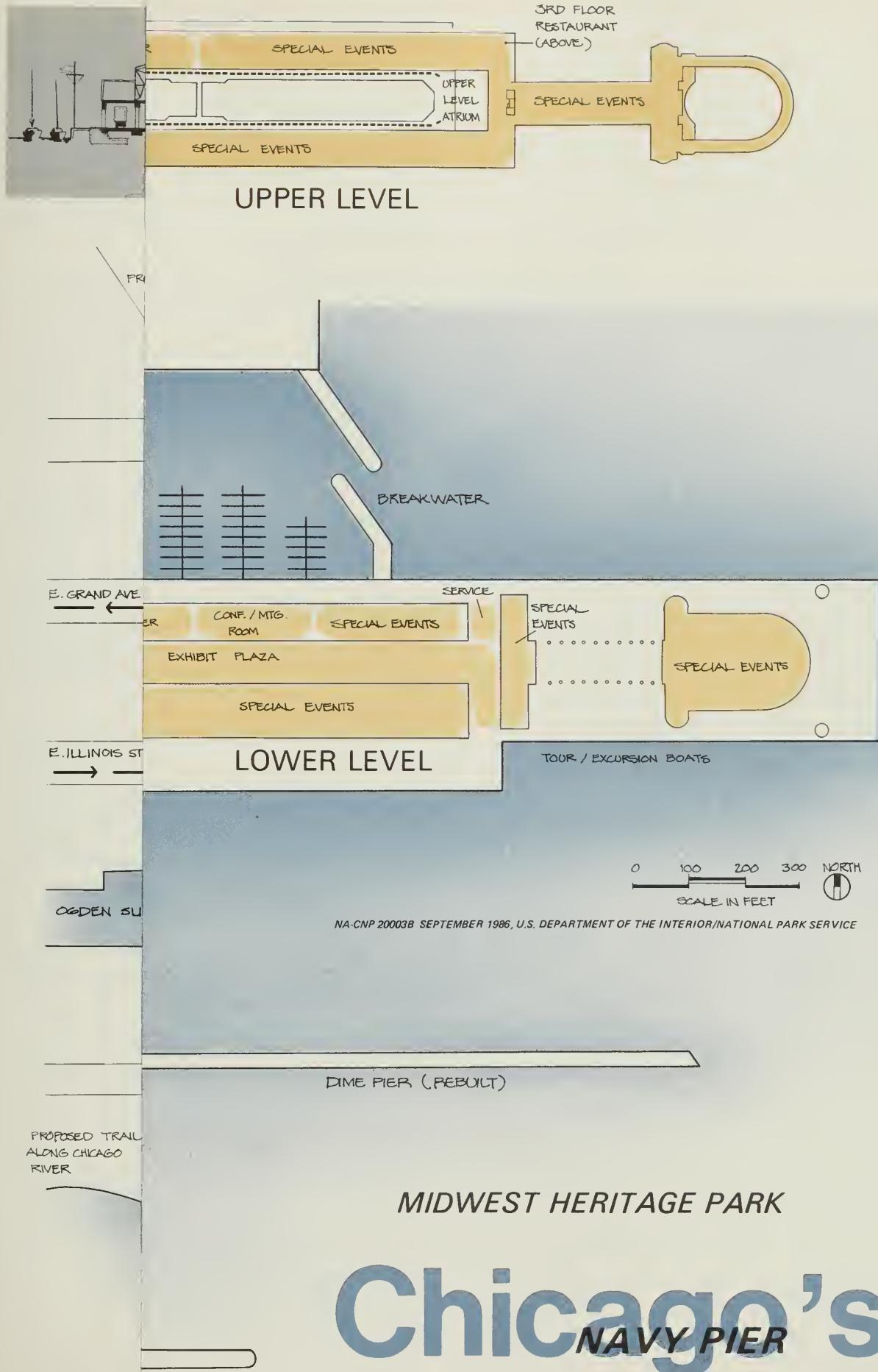
On-Pier Activities

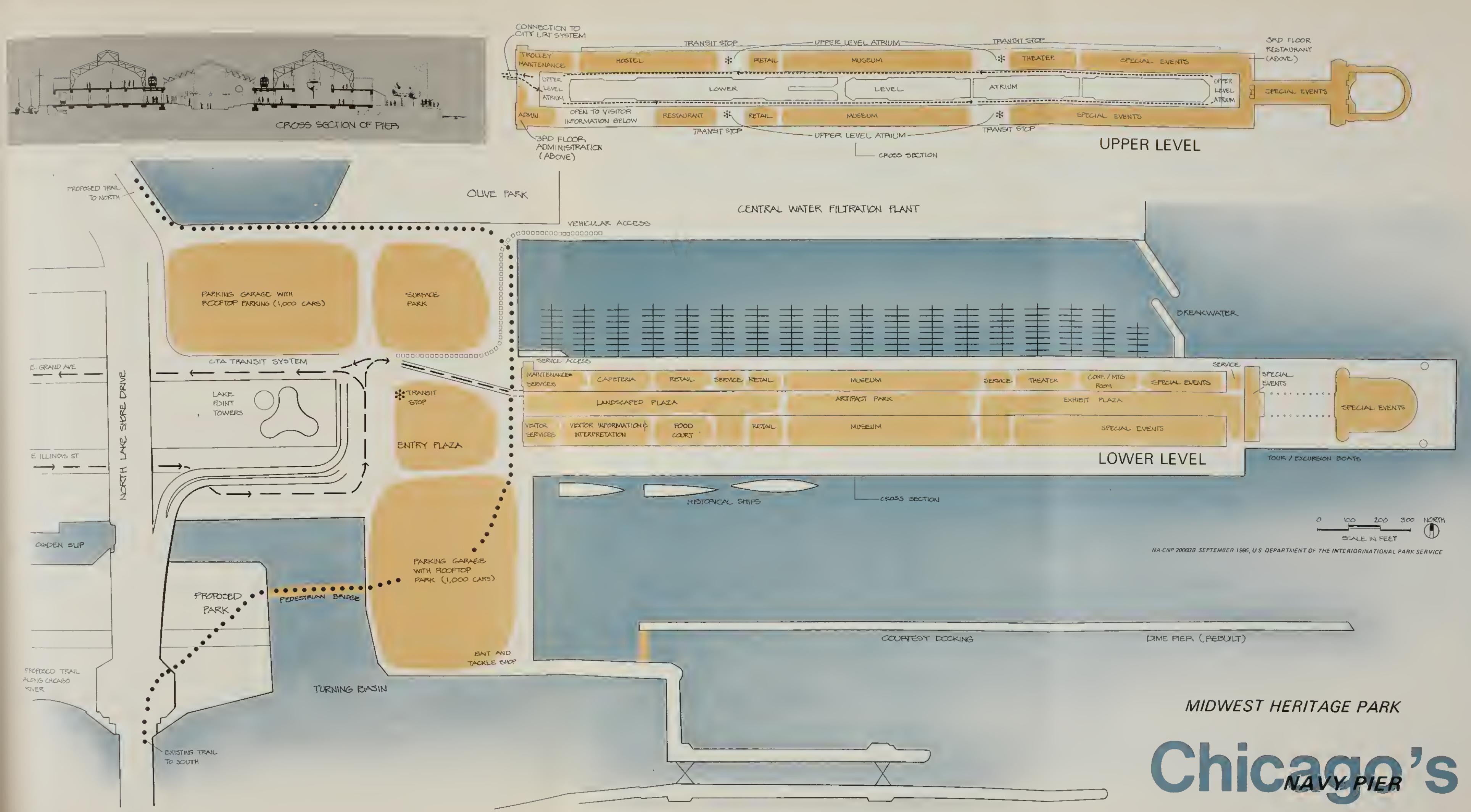
Information/Interpretation. Considerable emphasis would be placed on providing information and interpretive services related to the Midwest heritage theme. The visitor service area in the headhouse would be extended into the west end of the south shed to accommodate a variety of permanent exhibits and multimedia programs. The participants in this interpretive programming could include a variety of government agencies, depending on the management structure selected for the pier.

Museums. The center third of the north and south sheds would be devoted to museums displaying mostly large industrial artifacts related to the settlement and development of the Midwest. Themes would include railroad transportation, agriculture, industrial technology, and maritime commerce. The covered open space between the shed structures would be treated as an "artifact park," or a landscaped open space primarily for pedestrian circulation but with large artifacts displayed in interpretive bays off the walkways. The historic ships of the maritime museum would be docked along the south promenade, recalling the pier's historic use as a major docking facility.

Academic use of the museums would be encouraged by providing spaces for audiovisual programs and conferences in the east section of the north shed.

Overnight Accommodations. A hostel in the north shed would offer accommodations ranging from a 150-bed dormitory to 50 family-oriented





rooms. This low-priced lodging would be intended to support people attending conferences, regional school groups, and others wishing to visit the heritage park on a tight budget.

Retail Shops and Restaurants. A limited number of museum stores, gift and souvenir shops, and other specialty stores would offer items related to the heritage park theme. There would also be a bait and tackle shop near Dime Pier.

A wide range of food service would be available. A fast-food court would be located in the north shed, near the entrance to the pier. A cafeteria would operate on the first level of the south shed. It would be intended primarily to serve school groups and hostel guests. A moderately priced restaurant would be located on the second level of the south shed, overlooking the south promenade and the historic ships. A higher priced restaurant on top of the shelter and recreation buildings would offer indoor and outdoor dining and cocktails.

Theater. A 400-seat theater would be located between the museums and the special event space and would accommodate programs related to both uses.

Special Events. The terminal, shelter, and recreation buildings, the auditorium, and most of the eastern third of the north and south sheds would be available for special events, including expositions and festivals. The space between the sheds in this area of the pier would be used as an enclosed year-round exhibit plaza.

Off-Pier Activities

Marina. A 400-slip marina would be built off the north side of the pier, as in alternative A. Fifty slips within the marina would be reserved for transient boat use. Short-term courtesy docking would be accommodated along the north side of Dime Pier.

Charter and Tour Boats and Shoreline Fishing. Docking space for fishing charter and tour boats would be provided in its historic location at the east end of the pier, across from the recreation building. As in the other alternatives, Dime Pier would be accessible to people wishing to fish from the shore.

Access and Transportation

Two three-level parking garages would be constructed off the pier to the north and south of the headhouse. Each facility would provide 1,000 parking spaces, for a total of 2,000 spaces. The first 1½ levels of each garage would be built underground to help keep a low profile in front of the headhouse. The south garage would have a rooftop park to maintain an attractive entrance to the pier. A pedestrian walkway and bridge over the turning basin would link the rooftop park with the park space at

Cityfront Center and with the pedestrian and bicycle lanes on the Lake Shore Drive bridge. The surface park north of the entry plaza would provide a direct link to Olive Park and the proposed improved trail extending north to Oak Street Beach.

As described above, the historic trolley system would be restored to provide on-pier transit. This would require restoration of the historic trolley cars, or construction of replicas, and reconstruction of the access ramp through the headhouse and the rail loop around the second level of the interior courtyard. The trolley cars would stop at two points along the south shed inbound and at two points along the north shed outbound as they circled between the main stops at the headhouse and the terminal building. Escalators and elevators would lead to the lower levels of the sheds at each transit stop. The transit decks would be outside and exposed to the weather, as they were historically, but the cars would be enclosed and heated for use in winter, and the transit stops would be covered.

Service access to the entire pier would be provided along the lower outside portion of the north shed.

Two options would be possible for transit service to the pier from other areas of the city. In one option, transit service provided by the Chicago Transit Authority would bring visitors to a point immediately west of the headhouse. From the transit stop, visitors would walk through the headhouse to escalators and elevators that would take them up to the second-story on-pier transit terminal. In the second option, the on-pier trolley system would be a continuation of an off-pier transit line serving the Near North area, assuming that the CTA system was a compatible light rail type.

Tracks along Illinois Street or Illinois Street/Grand Avenue could potentially accommodate both modern light rail vehicles and the kinds of trolleys used at the turn of the century to serve the pier with theme transportation during the peak summer period. Only the trolley vehicles would be used on the pier. The modern vehicles would turn around in the entry plaza area. The possibility of connecting the on-pier and off-pier transit systems would be a major advantage of this system.

Development Costs and Phasing

The total capital costs of implementing the Midwest Heritage Park are listed in table 3. The explanation of costs included for the Great Lakes Park applies here also. Refer to appendix D for more detailed cost estimates.

Table 3: Development Costs and Phasing, Midwest Heritage Park

	<u>Net Construction Costs</u>	<u>Gross Costs*</u>
Phase 1 (years 1-3)	\$ 81,384,000	\$113,938,000
Phase 2 (years 4-7)	110,864,000	155,209,000
Phase 3 (years 8-10)	<u>8,880,000</u>	<u>12,432,000</u>
Totals	\$201,128,000	\$281,579,000

*Includes additional costs for design, construction supervision, and contingencies; see appendix D.

Operations

The annual public costs for operations and maintenance under this alternative would be approximately \$5.2 million. It is estimated that an annual rental revenue of \$5.6 million and an annual sales tax revenue of \$2.7 million would offset operation and maintenance costs and help retire the public debt. These costs and revenues are itemized in appendix D.

CHICAGO CULTURAL PARK

The Chicago Cultural Park features the rich diversity of Chicago's artistic, cultural, and ethnic heritage. With a marketplace, museums, theater and cinemas, art studios and galleries, a children's play park, and special expositions and festivals, the Chicago Cultural Park alternative would turn Navy Pier into a year-round celebration of the larger Chicago community. This alternative most closely resembles the "community center" concept advocated by the Mayor's Navy Pier Task Force.

Site Development and Architectural Concept

Under this alternative, an AGT system operated by the Chicago Transit Authority would be extended east to Dime Pier, then loop back west by way of Navy Pier to the Illinois Street/Grand Avenue corridor. This system is described in greater detail below. Because of highest projected

visitation levels, this alternative would require the greatest amount of parking, and the entry plaza in front of the headhouse would be flanked by parking garages on both the north and the south. Both garages would be covered with rooftop parks to enhance the appearance of the entrance area. As in the Midwest Heritage Park, most pedestrians and bicyclists would approach the pier by way of a trail and bridge over the turning basin that would tie into the rooftop park south of the entry plaza. From the plaza, people would walk through the headhouse into the visitor service area or directly into a large open marketplace (see the Chicago Cultural Park map). Visitors could also take an escalator or elevator to the second level, where they would be transported by moving walkways. Visitors arriving by public transit would disembark about midway down the pier, then travel by moving walkways from that location.

The courtyard between the sheds would be treated as an expansive open space with plantings and seating scattered throughout. At the west end of the sheds, market stalls would spill into this courtyard. These would give way to a sculpture garden, a children's play park, and an exhibit plaza, as pedestrians moved eastward through this central courtyard. Initially, only the center third of the courtyard would be roofed, but eventually the western two-thirds would be enclosed at the second-story roofline.

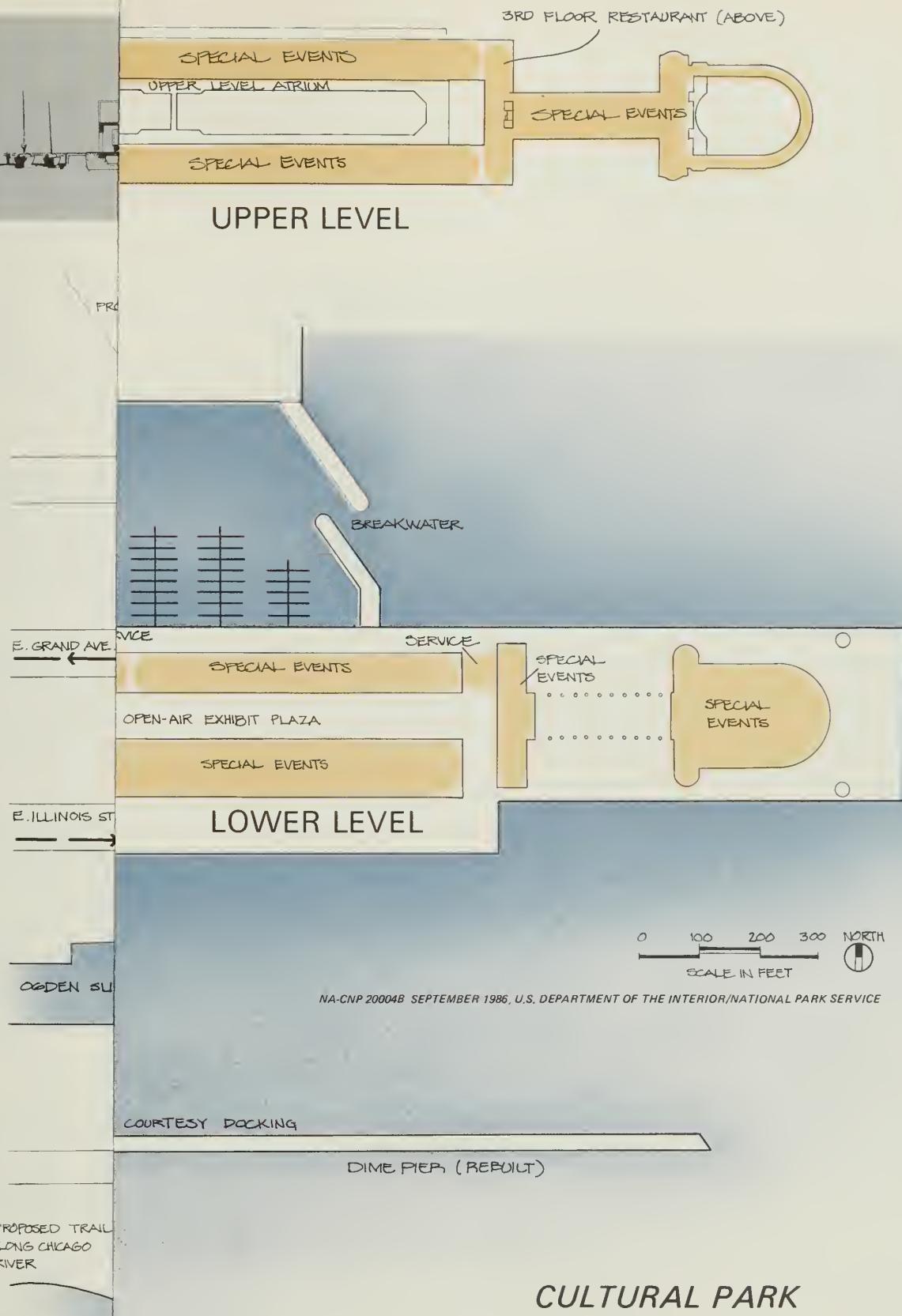
Plazas would cut through the sheds to connect the central courtyard with the south promenade in three places. Two of these plazas would be incorporated into the U-shaped sculpture garden, which would be an expansive, two-story, glass-enclosed conservatory-type space fronting on the south promenade.

Dime Pier would be connected to the mainland and to Navy Pier by way of a connecting pier that would carry pedestrians and the elevated CTA system. The connecting pier would enclose a small lagoon between the two piers. An amphitheater would overlook the lake at the head of the lagoon.

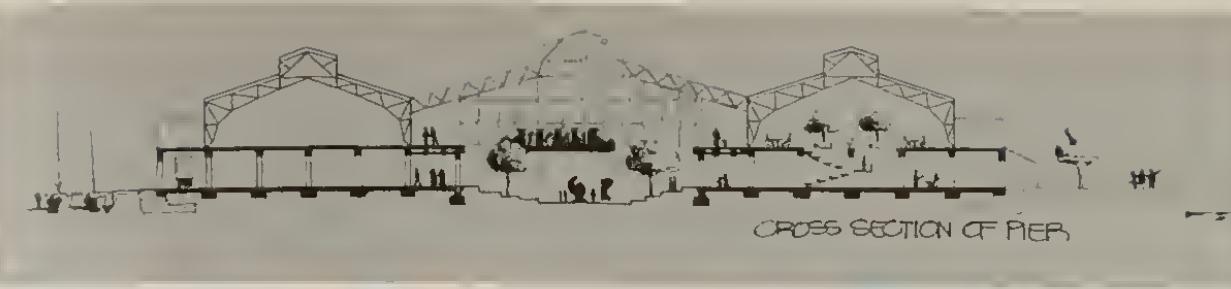
On-Pier Activities

Retail Shops and Restaurants. An open city marketplace with individual rental booths for crafts, ethnic foods, and fresh produce would attract buyers and sellers from across the city. The marketplace would be located just east of the headhouse. More traditional retail space for shops with a cultural arts theme would be available on the lower level of the north shed, across from the sculpture garden, and in the south shed, between the sculpture garden and a food court. As in the other alternatives, a bait and tackle shop would be situated near Dime Pier.

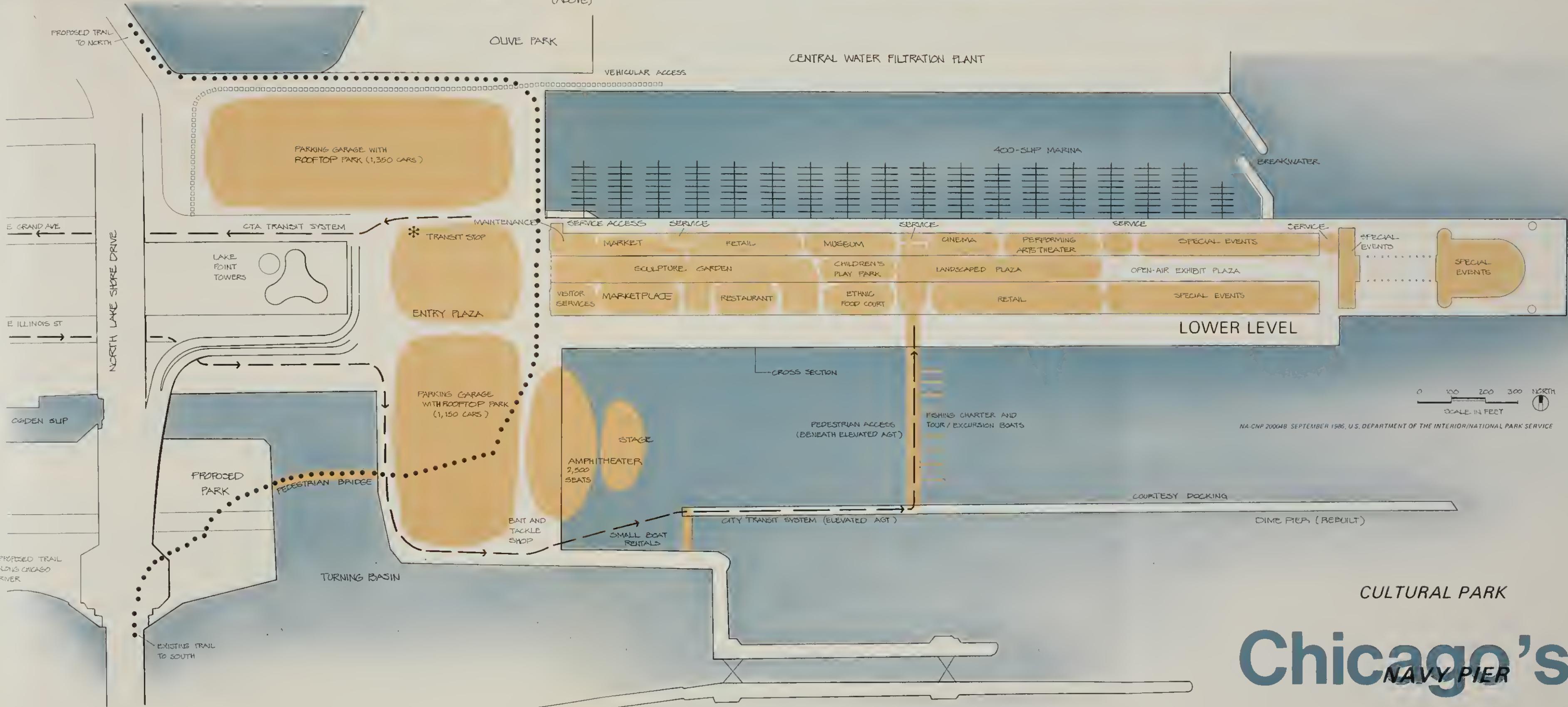
In addition to ethnic food booths contained within the marketplace, three other restaurant areas would be available to visitors. First, a sit-down restaurant would occupy the part of the south shed surrounded by the sculpture garden. This restaurant could also open onto the south



Chicago's NAVY PIER



UPPER LEVEL



promenade. Second, a series of fast-food restaurants would be located in the lower level of the south shed toward the east end. The enclosed landscaped plaza would provide a parklike eating area for those restaurants. A third restaurant on top of the shelter and recreation buildings would offer indoor and outdoor dining and cocktails.

Museums. Museums in the center of the sheds would carry out the cultural arts theme. Depending on space requirements, a large museum like the Museum of Contemporary Art might occupy the entire second level. If not, other local museums could utilize portions of that space. Space on the ground level of the north shed would be devoted to a children's museum or another family-oriented museum. A play park in the central courtyard in front of the museum could bring back a carousel, one of the popular historic attractions of the pier.

Cinema. A cinema next to the children's museum would show educational and foreign films, slide shows, and other special programs requiring audiovisual equipment. The cinema would not show first-run popular movies and would not compete with the North Loop theaters. Foreign films and other programs could be keyed to particular ethnic festivals or other special events.

Theater. A 400-seat theater next to the cinema would accommodate a variety of plays, recitals, concerts, and lectures. Emphasis would be on the special and the unique, and the theater could be used to support special events and to serve as a teaching ground for aspiring actors, musicians, and other performers.

Art School. The western third of the upper level of the north shed would be used by an art school, such as the School of the Art Institute, for instructional programming that would involve all segments of the population. Students would be encouraged to display and sell their works in an adjacent gallery.

Special Events. The terminal, shelter, and recreation buildings, the auditorium, and the entire eastern third of the north and south sheds would be used for special events, including expositions and festivals. The open courtyard and much of the south promenade could be used as well.

Off-Pier Activities

Amphitheater/Stage. A 2,500-seat amphitheater with a stage for open-air performances and concerts would be built at the head of the lagoon between Navy and Dime piers. Proximity to the water and reflections on the lake would enhance the experience for those attending the theater and concerts.

Marina. A 400-slip marina with 50 spaces reserved for transient boats would be built off the north side of the pier, as in the other alternatives. Short-term courtesy docking would be accommodated along the north side of Dime Pier.

Charter and Tour Boats. Docking space for fishing charter and tour boats would be provided on the connecting pier between Dime and Navy piers. Consideration would be given to using high performance craft, such as air-cushion vehicles or hydrofoils, for tour boats, in which case tours could be extended to more distant points of interest, such as Indiana Dunes. It is also possible that such vehicles could be used seasonally for commuting, with transfer to the CTA system at Navy Pier.

Nonmotorized Boating and Fishing. In the summer and early fall the large lagoon between Navy and Dime piers could be used for pedalboats, sunfish, and other nonmotorized boats. People could fish from the water or from Dime Pier.

Access and Transportation

Two three-level parking garages providing a total of 2,500 spaces would be constructed north and south of the headhouse. The first 1½ levels would be below grade, and the roofs would be landscaped parks. As in the other alternatives, trails would lead to Olive Park and to the parks and walkways across the turning basin. The amphitheater would be connected to the south parking structure to facilitate access.

A new city AGT system would carry visitors to and from the pier. The AGT vehicles would circle the south parking garage and proceed east on Dime Pier, carried on a beam-supported structure at an elevation where it would not interfere with public use. The AGT system would turn north and cross the water to enter Navy Pier approximately half way down the pier. A main transit stop would be constructed at this location, convenient to both the activity areas on the west end of the pier and the special event space on the east. Moving walkways would transport people east and west. Approximately 500 feet of conventional moving walkways would be needed on the west side, and 900 to 1,000 feet of conventional and accelerated walkways would be needed on the east. The AGT system would extend across the pier, then turn west and return to the mainland on the second level of the north shed. It would stop at a transit station near the north parking garage, then continue along the remainder of the Near North transit route.

This transit option would offer the major advantage of allowing CTA service to continue onto the pier if the Chicago Transit Authority chose to use AGT in the Near North area. The AGT system would intrude upon some of the views from the south side of the pier, but it would be designed to be as unobtrusive as possible.

Service access to the entire pier would be provided along the lower outside portion of the north shed.

Development Costs and Phasing

The total capital costs of implementing the Chicago Cultural Park are listed in table 4. The explanation of costs included for the Great Lakes

Park applies here also. Refer to appendix D for more detailed cost estimates.

Table 4: Development Costs and Phasing, Chicago Cultural Park

	<u>Net Construction Costs</u>	<u>Gross Costs*</u>
Phase 1 (years 1-3)	\$ 85,416,000	\$119,582,000
Phase 2 (years 4-7)	77,852,000	108,993,000
Phase 3 (years 8-10)	<u>48,145,000</u>	<u>67,403,000</u>
Totals	\$211,413,000	\$295,978,000

*Includes additional costs for design, construction supervision, and contingencies; see appendix D.

Operations

The annual public costs for operations and maintenance under this alternative would be approximately \$4.8 million. It is estimated that an annual rental revenue of \$6.8 million and an annual sales tax revenue of \$3.2 million would offset operation and maintenance costs and help retire the public debt. These costs and revenues are itemized in appendix D.

ALTERNATIVE CONSIDERED BUT ELIMINATED FROM FURTHER STUDY

One additional adaptive use alternative was considered but eliminated from further study. That alternative treated Navy Pier quite differently from the other alternatives, on the assumption that not all the space in the sheds must be used, or even preserved, and that development costs could be significantly reduced if some of the sheds were demolished. The fourth alternative focused on the open space and recreational values of the pier and on its potential to fill a gap in the recreational parkland along Chicago's Lake Michigan shoreline. The architectural concept involved creation of an unenclosed plaza on much of the pier by removing the walls and floors of the south shed, leaving only the steel frame standing as an aesthetic ruin. The remainder of the pier would be enclosed in glass to provide for year-round use while creating an illusion

of being outdoors. Uses would include a conservatory, gymnasium, summer market, limited food service, special events, and water-related recreation. The alternative was eliminated from further consideration following review of an initial draft of the adaptive use alternatives by city, state, and NPS reviewers because it failed to fulfill the agreed-upon revitalization goals for Navy Pier. The estimated visitation for this alternative was substantially lower than for the other alternatives, and use would be more seasonal. Also, the extensive modifications to the shed structures would result in major adverse effects on the historical integrity and character of the pier. The estimated gross cost of the alternative was comparable to the other alternatives (between \$238 million and \$266 million), despite less intensive development and use.

ANALYSIS OF IMPACTS

The impacts of the three adaptive use alternatives are described below. The impacts specific to the on-pier transportation systems are summarized at the end of this section.

Impacts of Adaptive Use Alternatives

Preservation of Historical Integrity. The alternatives were evaluated for preservation of the historical values and architectural character of the pier based on how well they would avoid changes to the structure or its setting. Preservation of the interior spaces was not considered as critical as preserving the overall scale, mass, and exterior appearance of the structure.

The Great Lakes Park concept would involve alteration of the roofline to cover some of the space between the sheds at the second-story level. Also, the placement of track for the transit system in the north shed would require structural alterations that might change the appearance of the north side of the pier. The retail shops and food service would require structural modifications and intensive support servicing that could detract from the historic character of the pier. Considerable alteration would be required to install the water slides and pools in the center of the pier.

The Midwest Heritage Park would place the greatest emphasis on preserving the pier's historical character. The on-pier transit system would not require any changes to the original configuration of the structure, since it would involve the reinstallation of the historic trolley system on the rehabilitated second-level transit decks. Covering only the first level of the interior court would still require some structural modification, but these changes would not significantly alter the historic appearance of the pier as viewed from the Chicago shoreline. The retail shops, food service, and hostel would require structural modifications and servicing. The hostel might require numerous physical modifications to satisfy codes for overnight use (fire exits, sprinkler systems, etc.). The theater would also require interior modification. More interior space

than in other alternatives would be devoted to compatible uses, such as museums, special events, and conference rooms, which would require fewer alterations to the basic structure.

The Chicago Cultural Park concept would include alteration of the roofline to cover some of the space between the sheds at the second-story level. In addition, the south elevation would be noticeably altered to create a glass enclosure for the sculpture garden and to allow cross-pier access for the transit system. The AGT rails and vehicles would be an obvious intrusion on the historic scene as viewed from the Chicago shoreline. The installation of a cinema and a theater would require considerable alteration of interior spaces. Also, this alternative would have the greatest amount of space devoted to retail shops and food service, increasing the impact from those activities:

Many of the potential adverse effects discussed above could be mitigated through sensitive design and the use of compatible materials. Any adaptive use and rehabilitation plan for the pier would have to be consistent with the secretary of the interior's "Standards for Historic Preservation Projects" (36 CFR 68).

Enhancement of Recreational Value. The degree to which each alternative would enhance the pier's recreational value was evaluated according to the following criteria:

provides public access to the shoreline and Lake Michigan for resource-based recreational activities, such as boating, fishing, and scenic viewing

preserves long-range views to and from the pier and enhances the immediate foreground setting

All three adaptive use alternatives would provide considerably more usable public space than is now available at Navy Pier, and all would enhance the scenic views. The land/water edges would be retained and enhanced as public recreation and pedestrian circulation spaces, furthering the city's public use goal for lakefront properties. Each alternative would retain the large open plaza surrounding the auditorium and the recreation and shelter buildings as an exceptional viewpoint for Lake Michigan and the Chicago skyline. Each alternative would also treat the south promenade as an enjoyable scenic viewpoint and pedestrian walkway enhanced by plantings, outdoor furnishings, graphics, and interesting pavings. Regardless of which alternative was implemented, Navy Pier would be connected to parks to the north and south by a system of pedestrian walkways, helping to complete a critical link in the city's lakefront park system.

Access to Lake Michigan would be provided by a marina and by fishing charter and tour boat services in all alternatives.

Scenic values would be protected in all the alternatives by keeping the parking garages in front of the pier lower in height than the adjacent

elevated portion of Lake Shore Drive. This would preserve the existing sight lines to and from the pier. In most instances, rooftop parks would be added to the parking garages to provide additional visitor use space, as well as to enhance visual quality. The immediate foreground setting for the headhouse would be enhanced by maintaining a ground-level entry plaza. This would preserve direct views of the headhouse for arriving visitors and maintain a human scale and sense of arrival.

There would be some minor differences among the alternatives in terms of scenic viewing opportunities. In the Midwest Heritage Park and Chicago Cultural Park concepts the rooftop park over the south parking garage, connected by a pedestrian walkway to the Cityfront Center, would serve as a primary pedestrian access point. This elevated park would afford excellent views of the headhouse, the main pier structure, and the lake, and people would also be able to see Grant Park and the city skyline from this vantage point. In the Great Lakes Park concept pedestrians and cyclists would enter the pier setting at surface grade, where they would have less impressive views of the pier, but more open views from the entrance plaza.

The single large parking garage included in the Great Lakes Park concept would partially obstruct views of the pier from the northwest. The rooftop park would offer good views of the marina and the lakeshore to the northwest, but the view of the north side of the pier, with its less attractive structural features, would not be as desirable as a view of the south promenade.

The docking of historic ships along the south promenade of Navy Pier in the Midwest Heritage Park would partially obstruct views from the promenade southwest toward the city. This impact would be significantly reduced in the Great Lakes Park by berthing the historic ships along Dime Pier rather than Navy Pier. In the Great Lakes Park the boatel would block views from the western third of the promenade, but the eastern two-thirds would be open. The presence of the historic ships would enhance the views of the pier itself from the southwest. In the Chicago Cultural Park the elevated transit system would partially block views from the promenade.

The amphitheater included in the Chicago Cultural Park would offer views toward the pier and the lake; however, these views would be partially obstructed by the elevated AGT system.

Preservation of Natural Values. The effectiveness of the alternatives in protecting natural values was determined using the following criteria:

- avoids significant impacts on Lake Michigan
- does not substantially increase air pollution
- increases greenspace

None of the alternatives would have a significant impact on Lake Michigan. The shoreline adjacent to the pier's west end has already been altered extensively. Minor additional fills along the shoreline would be necessary to reconstruct Dime Pier in all alternatives and to construct the amphitheater proposed for the Chicago Cultural Park. No adverse impacts would be associated with the connecting pier between Navy and Dime piers because the pier would be designed to allow a free exchange of water between the lake and the enclosed lagoon.

The marina, proposed under all the alternatives, would require the addition of a breakwater to provide a safe harbor for small boats and would result in minor amounts of boat-fuel pollutants entering the lake waters. Because of the configuration of the marina, pollutants might become concentrated there during periods of high use; however, they would eventually be dispersed by wind and wave action. Pollution in the marina area would not affect the water filtration plant, since the water intakes are either on the north side of the plant or at offshore locations.

No other pollutants would be expected to affect the lake. Improved storm runoff and sewage collection systems would be incorporated into the pier's redevelopment to avoid potential sources of pollution. Lake fills, reconstruction of Dime Pier, and marina development and use would result in temporary construction impacts, such as increased siltation. These impacts would be mitigated and regulated under appropriate authorities and through permits issued by the city of Chicago, the Illinois Department of Conservation, the U.S. Army Corps of Engineers, and the U.S. Coast Guard.

Some increases in air pollutants would be attributable to the anticipated significant increase in automobile travel to the pier. Between 1,600 and 2,500 cars, depending on the alternative, would be able to park at the pier at any given time. The demand for access in excess of the available parking would be accommodated by public transit. Some increases in pollutants would be associated with the allowed amount of private vehicle traffic. Further minor increases would be associated with increased boat traffic.

One of the two greenspaces in the study area, Olive Park, would not be affected. The other, Navy Pier Park, would be part of the redevelopment area in all the alternatives. New greenspace would be created in all of the alternatives. Rooftop parks would be added to one or more of the parking garages, and surface parks would be created in front of the headhouse under the Great Lakes Park and Midwest Heritage Park concepts. The result in all alternatives would be a net increase in public greenspace.

Visitation and User Characteristics. All three adaptive use alternatives would provide for full public access to all the facilities on Navy Pier. Each would offer a variety of activities intended to attract a high level of public participation and to appeal to a broad cross section of society. Some uses, such as the marina and higher priced restaurants, would be oriented to people with higher incomes. Taken in total, however, each of

the three alternatives would offer enough variety and low-cost or no-cost activities to ensure widespread public appeal. Extending CTA transit to the pier would make it more accessible to all sections of the city, further encouraging all residents to take advantage of its cultural and recreational facilities.

Annual visitor use levels were estimated through comparisons with existing recreational and cultural facilities and extrapolations from the Rouse Company proposal (see appendix C). The museums, water recreation complex, and special events in the Great Lakes Park would be expected to attract repeat visitors from throughout the greater Chicago region. It is estimated that up to 7 million people would visit the pier annually once this alternative was fully implemented. City-sponsored special events, such as A Taste of Chicago, Art Expo, and ethnic festivals, would be expected to attract the largest crowds under this and all the other alternatives.

The Midwest Heritage Park would be expected to attract more regional and national visitors, assuming the museum collections were nationally significant. The estimated annual use level would be 9 million visits per year.

Repeat visits would be expected to be highest at the Chicago Cultural Park, contributing to the relatively high use estimate of 11.5 million visits per year for that alternative.

Integration with Adjacent Land Uses. The following criteria were used to evaluate the alternatives for integration with adjacent land uses:

enhances the public lakefront open space and links the lakefront parks to the north and south

complements, rather than competes with, other recreational attractions and local commercial establishments

minimizes traffic congestion and other impacts on local streets and neighborhoods

All the alternatives met the first criteria, as discussed under recreational values.

Evaluation of the alternatives under the second criteria was more difficult since any new opportunity, by definition, would compete with existing attractions or commercial activities to some extent. The unique character and recreational values of the pier would undoubtedly give activities located there a greater drawing power than those located in a less attractive environment. To minimize competition and duplication of services, only recreational attractions that are in great demand in the region or that are not currently available were included in the adaptive use alternatives. The commercial activities in each alternative were generally limited to those that would support the adaptive use themes and provide basic services to pier visitors, rather than being determined solely by market considerations.

Nevertheless, some commercial uses might result in unwanted competition for area businesses. The on-ship hotel proposed in alternative A and the food service in all three alternatives would compete with existing commercial uses to some degree. The retail shops proposed in all alternatives and the marketplace included in the Chicago Cultural Park could also draw customers from present establishments. The degree of impact would relate to the extent of the retail or marketplace activity. Retail competition would be highest in the Chicago Cultural Park, next highest in the Midwest Heritage Park, and lowest in the Great Lakes Park. Because of the undetermined nature of the commercial tenants that will occupy the proposed developments west of the pier, the effects of competition generated by commercial activities on Navy Pier is speculative at best, but it would be expected to be minimal given the scale of development proposed for the Near North area. Local commercial activities would probably benefit over the long term from increased visitation to the pier.

All of the alternatives would generate additional traffic congestion, increased pressure for on- and off-street parking, and slightly higher noise and air pollution levels, at least until effective public transit was established. These impacts would be directly proportional to the level of visitation, which would be highest in the Chicago Cultural Park, followed in order by the Midwest Heritage Park and the Great Lakes Park. Local streets and neighborhoods would also be affected by the extensive proposed mixed-use development in the Near North area. The cumulative impacts of all these activities would be partially mitigated by gradual, phased development at the pier and throughout the Near North area. Well-planned, phased improvements to the public transit systems serving the Near North, with connections to Navy Pier, would significantly reduce traffic congestion.

Redevelopment of Navy Pier under any of the three adaptive use alternatives would benefit residents of adjacent areas through general aesthetic enhancement of the site and the provision of nearby cultural, educational, and recreational facilities. The visitor use projections for each alternative assume regular use by area residents.

Impacts of On-Pier Transportation Systems

The impacts of the on-pier transportation systems are summarized in table 5. Overall, the LRT trolley system included in the Midwest Heritage Park would be expected to be the most reliable, and it would be most compatible with the historic character of the pier. However, it would require the most space for operation. In comparison, AGT systems are relatively new, and their reliability has not been established. The AGT system included in the Chicago Cultural Park might be a visitor attraction in itself. Moving walkways, also included in that alternative, would be the least obtrusive form of transportation and generate the least noise.

Table 5: Impacts of Alternative On-Pier Transportation Systems

	<u>Perceived Reliability</u>	<u>Perceived Attraction</u>	<u>Space Used on Pier</u>	<u>Compatibility With Historic Use</u>	<u>Noise Generation</u>
<u>Great Lakes Park</u>					
AGT	Low	Medium	Medium	Low	Medium/High ¹
<u>Midwest Heritage Park</u>					
Trolley	Medium/High	High	High	High	High ²
<u>Chicago Cultural Park</u>					
AGT and moving walkways	Low	High ³	Low	Low	Low ⁴

¹ Medium with rubber tires, high with steel wheels.

² Would not exceed American Public Transit Association noise standards or city noise code.

³ Perceived as high because of routing over Dime Pier and Lake Michigan to Navy Pier.

⁴ Low for moving walkways; same as Great Lakes Park for AGT.

PUBLIC MANAGEMENT ALTERNATIVES

The alternatives in this section describe several different types of management structures for Navy Pier. In directing this study, Congress specifically requested evaluation of "the feasibility and desirability of making Chicago's Navy Pier a recreational and cultural unit within the National Park System under the operating jurisdiction of a commission made up of persons appointed by the Mayor of Chicago and the Secretary of the Interior or persons appointed by the Mayor of Chicago, the State of Illinois, and the Secretary of the Interior with appropriate cost-sharing by Federal and city or Federal, State and city governments." This document does not set forth "appropriate cost-sharing" because appropriate roles for the various governments must first be set forth in legislative actions. Pending further legislation, the only appropriate role for the National Park Service is the conduct of this study as directed by Congress.

The legislative report language further stated, "The study should address the appropriateness of a commission to facilitate State, local, and Federal cooperation such as exists with the Illinois and Michigan National Heritage Corridor Commission and the Lowell National Historic Preservation Commission. The model of the cooperative arrangement between the Federal government and the State of New Jersey to protect and preserve the Pinelands areas may also be useful."

Additional direction was provided by the "Management Policies" of the National Park Service. The policies pertaining to the conduct of new area studies specify that, in addressing management alternatives, "the Service will consider (1) whether the area is or will be assured of being adequately protected through other alternatives for preservation outside the [National Park] System; and (2) whether, under such protection, it would be available for public appreciation and use."

The National Park Service consulted with the city of Chicago and the state of Illinois to provide a thorough evaluation of the specified intergovernmental commission alternatives and the "other alternatives for preservation outside the System." The following interests and concerns influenced the formulation of the management alternatives as they are presented in this document and will be important considerations in the ultimate selection of a management structure for Navy Pier.

The city of Chicago built Navy Pier, has owned it continuously, and has managed it throughout most of its 70-year history. As the owner and primary governmental jurisdiction, the city continues to have a strong interest in the pier's future use and management for the benefit of Chicago's citizens. The city has already begun the task of rehabilitating the pier through bond financing and has recently addressed its future through the work of the Mayor's Navy Pier Task Force.

Additional public interest in Navy Pier exists outside of Chicago, in the state of Illinois and beyond. The National Park Service analysis of Navy

Pier demonstrated that it is historically and recreationally significant to a multistate region of the Midwest. Furthermore, the adaptive use alternatives presented in this document demonstrate definite potential for extensive use of a revitalized pier by visitors from outside the greater Chicago area, making its probable service area the Midwest region.

The adaptive use alternatives show the magnitude of the task involved in creating and operating a recreational and cultural facility at Navy Pier. The capital investment will be large, and the uses likely will be diverse. In addition to the funding capability required, the management entity for Navy Pier will need an unusual breadth and depth of management and professional expertise for both the initial planning and development and the ongoing operation of a revitalized facility. The study participants viewed this factor as being extremely important. The consensus was that no single governmental entity could fully implement any of the adaptive use alternatives. These professional judgments confirmed the notion, implicit in the legislative report language, that intergovernmental cooperation offers the best opportunity for realizing Navy Pier's full potential.

CITY MANAGEMENT

One of the major reasons for this study of Navy Pier was a concern that the city of Chicago does not have sufficient financial resources to realize the pier's full potential as a recreational and cultural facility. Mayor Harold Washington initially requested federal assistance in planning for pier revitalization in July 1985. In his testimony at the October 1985 hearing conducted by the House Appropriations Subcommittee on Interior and Related Agencies, the mayor stated, "I believe the potential for the full use and development of the pier will be furthered by cooperation between the citizens of Chicago, the Department of the Interior, and the Illinois Department of Conservation. . . . I encourage the National Park Service to consider alternatives that will augment and enhance the city's resources and recognize the Pier's strong local, state, and national significance."

The January 1986 report of the Mayor's Navy Pier Task Force recommended that "Navy Pier become a community center whose base would be the entire city of Chicago," and proposed an intensive, varied mix of uses and activities. This concept is similar to the Chicago Cultural Park concept presented in part two of this document. The report indirectly identified the city's limited capability to fund and operate a fully revitalized pier by outlining a series of possible nonmunicipal funding sources and by recommending consideration of a "quasi-public management entity, contracting with a management firm with experience with similar undertakings, or creating an advisory committee with members of the private and public sectors for the long-term management of the Pier."

The National Park Service analysis of the city's capability for realization of the pier's full potential reached a similar conclusion. As the task

force report indicated, the city could reasonably expect to complete the short-term rehabilitation and public use actions recommended by the task force, but many of the more expensive, long-term items included in the task force's second and third phases would be beyond the city's capability. Unless the city's resources could be augmented, this would likely result in a more limited pier facility than the ones described in the task force report and in part two of this document. The city management alternative described below addresses various means for enhancing the city's capability to develop and manage Navy Pier.

Description

Under this alternative, Navy Pier would be planned, funded, developed, and managed by the city of Chicago with the assistance of other local governmental entities and an advisory committee made up of representatives of the local governments and community leaders from the private sector. Additional local government participants might include the Chicago Public Buildings Commission, the Chicago Transit Authority, the Chicago Park District, Cook County, and others. Private sector representation would be designed to generate broad community support for pier revitalization, including private fund-raising and management assistance.

The mechanism for implementing this structure would be a detailed use and management plan recommended by the previously described advisory committee and approved by the mayor of Chicago and the Chicago City Council. In addition to selecting a use concept, the plan would detail development phasing and define physical and functional areas of responsibility for development, funding, and operation by the public and private participants. Based on the approved plan, legal agreements would be developed between the city and the other entities. Leasing of facilities or spaces, or contracting of management services for particular activities, would be the option of the responsible governmental entity.

To provide additional funding capability for the project, the plan should consider formation of a special assessment district for Navy Pier that would return all sales tax collected from pier activities to a joint pier capital improvements fund. The fund would be used first for implementation of the revitalization plan and then for cyclical maintenance and eventual replacement of capital facilities. Any net revenues generated in excess of annual operation and maintenance costs specific to an activity or use should also be pooled in this fund. As a means of encouraging additional private financing, consideration should also be given to the creation of a Navy Pier development corporation modeled after industrial or economic development corporations used successfully elsewhere by municipal governments.

The advisory committee would review facility designs, capital improvement priorities, and operational plans prepared by the participating management entities, then recommend actions to the city. The advisory committee could also mediate any operational disputes between pier managers.

Future revisions to the use and management plan would be recommended by the advisory committee for final approval by the mayor and the city council.

Analysis

Management and operation of the adaptive use alternatives should be within the capability of the city with significant support from additional local government partners, supplemented by some private leasing and development of facilities and contracting of management services. The success of this city management alternative would definitely require broad community support, generated in part through an active advisory committee, and a high level of commitment from and cooperation among the participating local governments.

A gradual, incremental development approach would be necessary to spread capital investments over a period of years. Even with phasing, however, funding of the full range of rehabilitation and use would probably be beyond the resources of local governments without substantial additional funding from private sources. This could result in modification of the use concept to include additional privately funded and operated uses or to reduce the overall scope of development and use.

STATE-LEVEL MANAGEMENT

The strong interest in Navy Pier outside the greater Chicago area has been demonstrated during the past year by the actions of the state of Illinois. In the spring of 1985 Speaker Michael Madigan of the Illinois House of Representatives called for the Illinois Department of Conservation to acquire the facility from the city of Chicago, restore it, and operate it as a state park. The assembly subsequently passed legislation appropriating \$400,000 for a feasibility study. Governor James Thompson supported the idea and signed the legislation in September 1985. The state study was delayed pending an increase in the state bond authorization ceiling that was enacted this spring, but it will be initiated in the fall of 1986.

The feasibility of this alternative would depend on the transfer of either actual ownership or complete management authority from the city of Chicago to the state of Illinois. The city's ability to relinquish ownership is limited by legal requirements concerning amortization of improvements funded by general obligation bond revenues. At a minimum, the state would need to assume the city's obligation for the outstanding bonds, and additional compensation for the value of the facility might be necessary.

While these issues could be resolved, the city continues to have a strong interest in the pier due to its location and importance to Chicago, and it has not indicated an interest in transferring complete responsibility for the pier to the state. As indicated above, however, Mayor Washington has expressed interest in a cooperative approach. In written testimony

presented at the October 1985 hearing, Governor Thompson stated that "Navy Pier represents a unique opportunity for all of us--the City of Chicago, the State of Illinois, and the federal government, as well as the private sector in appropriate roles--to work cooperatively to realize the Pier's potential. . . . I intend to pursue my own strong personal interest in Navy Pier restoration through continuation of the active ongoing cooperation with the National Park Service and the City of Chicago. . . . There is no excuse in the world for us, working together, to fail to realize the full potential of Navy Pier for the people of Chicago, Illinois, and these United States."

A joint venture between the city of Chicago and the state of Illinois would enhance the city's capability to fund and operate a revitalized facility and would also reflect the significance of the pier and the interest outside of Chicago.

Description

In this alternative, a new state park would be created at Navy Pier. Navy Pier State Park would be jointly planned, funded, developed, and managed by the city of Chicago and the Illinois Department of Conservation (DOC) under the direction of a commission made up of members appointed by the mayor of Chicago and the governor of Illinois. The mechanism for implementing this state-level management structure would be legislation passed by the Illinois General Assembly and signed by the governor. The first task of the commission would be preparation of a joint plan that would define physical and functional areas of responsibility for funding, development, and operation by the city and the DOC. This plan would be recommended by the mayor of Chicago and the governor of Illinois, and approved by the Chicago City Council and the Illinois General Assembly.

A possible division of responsibilities, based on an NPS analysis of present capabilities, could be as follows: The city could be responsible for basic rehabilitation of the pier structures; for necessary infrastructure improvements such as utility connections, street improvements, and transit linkages; and for special event and exhibition facilities, most cultural and recreational spaces and uses, and retail activities on the pier. The DOC could be responsible for the public lands at the head of the pier, including open space, trails, and parking facilities; for the adjacent water areas, including marina facilities, Dime Pier, and other boat operations; for visitor information and interpretation facilities and services near the entrance to the pier; for museums related to Great Lakes cultural and natural history; and for outdoor passive recreational areas on the east end and south dock of the pier. In addition, the state of Illinois could provide supplemental funding and technical assistance to the city for some of the basic improvements, particularly historic rehabilitation, on the pier itself.

As with the city management structure described above, private leasing and development of spaces or contracting of management services would

be the prerogative of the responsible entity. Consideration should be given to creating a special assessment district to return sales tax collected from pier activities to a joint capital improvements fund. Any net revenues generated in excess of annual operation and maintenance costs would also be returned to the joint fund.

The commission would be responsible for approval of facility designs, capital improvement priorities, and operational plans or legal agreements prepared by the city and DOC staffs, and for resolution of any operational disputes. Future revisions to the joint plan would be recommended by the commission for final approval by the original parties.

Analysis

The involvement of the Illinois Department of Conservation would reflect the significance of Navy Pier and the interest outside of Chicago. Joint city and state involvement would create a broad base of management capabilities and expertise to cover a wide range of uses and activities. A united, cooperative effort between the city of Chicago and the state of Illinois would be essential to the success of this alternative.

This management structure would significantly expand the funding for Navy Pier by drawing on the broader revenue base of the state of Illinois and allow full revitalization within a shorter time period. Success of this approach would still require gradual development to keep pace with utility, street, and transit improvements in the surrounding area.

FEDERAL INVOLVEMENT

The Reconnaissance Survey for Navy Pier, published by the National Park Service in December 1985, analyzed the historic and recreational resource values of the pier and determined that it is a significant regional resource, both historically and recreationally, with potential to provide additional recreational and cultural opportunities for Chicago area residents and visitors. As described in that document, however, the National Park Service determined that Navy Pier does not meet the prescribed criteria for national significance found in the "Management Policies" of the National Park Service.

In keeping with that finding, the option of designating the pier as a unit of the national park system, with a central management role for the National Park Service, has been dropped from further consideration in this study. A more modest level of federal participation might be appropriate, based on Navy Pier's regional significance, its value as an important recreational resource for the nation's third largest urban area, and its potential to attract national visitation.

Two management alternatives for intergovernmental commissions involving the federal government are presented in accordance with the specific language of the legislative report directing this study. In evaluating the

intergovernmental commission models referenced in the legislation, the study participants determined that the Lowell National Historic Preservation Commission model was the most applicable to a possible intergovernmental management structure for revitalization of Navy Pier. The study participants agreed that, like the Lowell commission, any Navy Pier commission would be most important during the initial planning, funding, and development phases. Such a commission should be established with a "sunset" provision that would eventually phase it out of existence. Part of the commission's mandate for planning would be to carefully define the roles and functions of participants in long-term management and operation of the pier, and to outline any ordinances, legislation, or agreements necessary for implementation and ongoing operations.

City/Federal Management

Description. In this alternative, Navy Pier would be jointly planned, funded, and developed by the city of Chicago and the federal government under the direction of a new intergovernmental commission made up of members appointed by the mayor of Chicago and the secretary of the interior, with additional representatives from several other federal agencies. The commission's role would be limited to the initial redevelopment of Navy Pier, and the city of Chicago would be responsible for long-term management and operation.

The mechanism for implementing this management alternative would be legislation enacted by the U.S. Congress and signed by the president. The initial task of the commission would be preparation of a detailed plan that would describe a mix of uses for Navy Pier, define appropriate city/federal cost-sharing, and outline the specific responsibilities of the commission in overseeing development. This plan would be recommended by the mayor of Chicago and the secretary of the interior. The Chicago City Council and the U.S. Congress would enact the ordinances or legislation necessary to implement the plan, including sunset provisions to terminate the commission upon completion of development.

While the Department of the Interior would have federal lead-agency responsibility for the commission, broad federal assistance would be provided by other appropriate agencies, such as the Departments of Commerce, Housing and Urban Development, and Transportation; the National Endowment for the Arts; and the Army Corps of Engineers. Staff and funding for the work of the commission would be provided by the city of Chicago and the participating federal agencies. The commission would approve facility designs, development priorities, and initial operational plans or legal agreements prepared by city and federal agency staffs.

All revenues generated by pier activities or leased spaces would be retained and administered by the commission during its life. These revenues should first be used to cover the administrative expenses of the commission and the city's annual operation and maintenance expenses.

Any excess revenues should be used to finance a capital improvements fund for cyclical maintenance and eventual replacement of capital facilities. The city should also consider creating a special assessment district that would return sales tax collected from pier activities to the capital improvements fund. The plan should address the issue of continued federal oversight following termination of the commission, if any is required.

Analysis. The city/federal management structure outlined above would require the highest level of federal funding and assistance of any considered in this study. With broad federal agency participation in the commission's start-up function and management by the city of Chicago, this alternative would have a strong urban redevelopment focus.

The city/federal structure would significantly expand the funding and development capability for Navy Pier by drawing on the broader revenue base of the federal government and the expertise available in a number of federal agencies. While federal involvement would certainly enhance the city of Chicago's ability to realize the pier's full potential, the city's management and operational capability might need to be further augmented using some of the strategies discussed under the city management alternative.

To be successful this approach would require gradual development to avoid adverse impacts on the surrounding area; a united, cooperative effort between the city of Chicago and the federal government; active participation by several federal agencies; and, ultimately, the support of elected representatives within and outside the Midwest region for federal participation in Navy Pier revitalization.

City/State/Federal Management

Description. In this alternative, Navy Pier would be jointly planned and developed by the city of Chicago, the state of Illinois, and the federal government under the direction of a new intergovernmental commission made up of members appointed by the mayor of Chicago, the governor of Illinois, and the secretary of the interior. The commission's role would be limited to the initial development of the pier, and the city of Chicago and the Illinois Department of Conservation would be primarily responsible for management and operation of the completed facility. The National Park Service would provide planning and technical assistance to the commission and could have other limited support roles in development and operation of the pier. The Smithsonian Institution could also provide technical assistance to the commission.

The mechanism for implementing this management option would be legislation enacted by the U.S. Congress and signed by the president. The initial task of the commission would be preparation of a detailed plan that would define a mix of uses for the pier and specific physical and functional areas of responsibility for development and operation by the participating governmental agencies. The plan would be recommended by

the mayor of Chicago, the governor of Illinois, and the secretary of the interior. The Chicago City Council, the Illinois General Assembly, and the U.S. Congress would enact the ordinances and legislation necessary to implement the plan, including sunset provisions to terminate the commission upon completion of development.

Staff and funding for the work of the commission would be provided by the participating agencies. The commission would approve facility designs, development priorities, and initial operational plans or legal agreements prepared by the managing agency staffs and resolve any operational disputes.

The respective areas of responsibility of the city and the DOC would be similar to those outlined for the state-level management alternative described previously. In addition to providing planning and technical assistance to the commission, the National Park Service could promote preservation and interpretation of the pier's significant historical and recreational values, seek supplemental funding for rehabilitation and improvement of the pier, and operate visitor information and interpretation facilities and services related to the national park system, with particular emphasis on midwestern parks. The Smithsonian Institution could provide technical assistance to the commission, loan selected objects from its collections for rotating exhibits in a facility operated by a Chicago museum, and help the museum define the scope of permanent collections.

All revenues generated by pier activities or leased spaces would be retained and administered by the commission during its life and subsequently by the managing agencies. These revenues should be used first to cover the administrative expenses of the commission and to offset the managing agencies' annual operation and maintenance costs. Any excess revenues should be used to finance a capital improvement fund for cyclical maintenance and eventual replacement of capital facilities. The city should consider creating a special assessment district to return sales tax collected from pier activities to the capital improvement fund.

Analysis. The involvement of the National Park Service and the Smithsonian Institution would reflect the pier's significance to a multistate region and its potential to attract national visitors. Joint city and state involvement would create a broad base of management capabilities and expertise similar to the base under the state-level management alternative. Participation by the National Park Service and the Smithsonian Institution would allow more extensive interpretive programs and additional emphasis on historic preservation and museum facilities.

This management structure would further expand the funding for Navy Pier by incorporating contributions from the city, state, and federal governments. It would eventually allow for full revitalization of the pier. However, the time required for initial development could be longer than under the other options because of the need for legislative action at three

levels of government. As with the previous alternative, the success of this approach would require phased development, a cooperative effort among and active participation by the various governments, and support for federal participation in Navy Pier revitalization from elected representatives within and outside the Midwest.

*PART THREE:
PROPOSAL FORMULATION*



PLANNING PERSPECTIVE

Following review of the adaptive use and management alternatives, the National Park Service reviewed a number of development models suggested in the congressional report for the study's authorizing legislation and in the October 1985 congressional hearing on Navy Pier. The objective of the review was to identify factors responsible for the success of these developments that could contribute to the revitalization of Navy Pier.

The National Park Service identified three development models (described in the next section) that offer useful concepts and ideas applicable at Navy Pier. The lessons learned from these developments, and the knowledge gained through earlier cooperative efforts, were incorporated by the National Park Service into a proposal for development of Navy Pier as a unique urban park through a partnership of private corporations, civic organizations, and government agencies.

DEVELOPMENT MODELS

HARBOURFRONT

Harbourfront began in 1972 with completion of a waterfront development plan sponsored by the Canadian federal government, the city of Toronto, and a regional council of governments known as Metropolitan Toronto. Originally the city's industrial and shipping center on Lake Ontario, this 92-acre area had become obsolete because of shifts in shipping patterns. The lakefront lands and derelict structures were bought by the federal government and transferred from the control of the Toronto Harbour Commission to a federal crown corporation managed by an independent board of directors representing business and education, the city of Toronto, Metropolitan Toronto, the province of Ontario, and the federal Ministry of Public Works.

The Harbourfront plan calls for development of a new neighborhood and extension of downtown Toronto along Lake Ontario. The development will house a local population of residents and workers, but its unusually rich collection of parks and public activities will serve a wider population as well. Private residences will range from luxury urban town houses and moderately priced condominiums to rental apartments and subsidized housing for the elderly and low-income families. Commercial uses will include offices, retail stores, restaurants, and hotels.

This place for living, working, and shopping will also be an urban gathering place for public cultural and recreational use. The entire lakefront and more than 40 percent of the total land area will be landscaped parks and public open space, including the Water's Edge Promenade, a shallow pond for summer canoeing and winter ice-skating, a sculpture garden, an outdoor stage for performing arts, and abundant space for festivals and special events. In addition, Harbourfront will feature marinas and a nautical center, a dance theater and art gallery, a festival hall for recitals, concerts, and literary readings, and the York Quay Centre with information and programming offices, facilities for school groups, craft studios, a theater/multipurpose auditorium, and food service. Many of these facilities are now in operation, and more than two million visitors attended over 4,000 events in 1985.

While the Harbourfront plan proposes an exciting mix of commercial and public uses, its true genius is the innovative combination of private and public development and financing. The capital investment required to complete Harbourfront is projected to total \$750 million (Canadian), but only \$150 million will come from government sources. Implementation of the plan began primarily with government financing, but that has been followed by incremental increases in private development and corporate contributions. The development is currently about 60 percent completed and on schedule, and the original goal of financial self-sufficiency by 1987 should be achieved.

In 1985 Harbourfront's extensive program of festivals and events included more than 2,000 that were free to the public. This pattern will continue with an annual operating program of cultural and educational activities and extensive public recreational use, all financed by user fees, the income generated by private development, and corporate contributions.

Another factor in Harbourfront's success is the quality of its design and programming. The corporation has encouraged excellent design by making it an important criteria in the selection of developers. After choosing a use concept for a particular parcel, a two-stage proposal call is initiated. The first stage of the call is advertised nationally, and submission requirements are intended to identify serious, viable, and appropriate proposals. Proponents are then selected for the second stage, which is primarily a design competition with an additional financial component. Harbourfront then selects a proposal and begins final negotiations, maintaining strict control over the final designs for new structures. The success of this approach is evident in the excellent architectural design of the completed structures, including the inspired work of Vancouver architect Arthur Erickson, one of Canada's finest.

The emphasis on quality is also evident in Harbourfront's festivals and other programming. The Reading Series and the International Festival of Authors have drawn writers from around the world. The Premiere Dance Theatre has won acclaim for its diverse program including the best classical and modern dance companies from Canada, the United States, Great Britain, and France.

The broad community and governmental support for Harbourfront has been critical in creating an environment for success, attracting the participation of many talented individuals in business, the design professions, and the arts.

LOWELL HISTORIC PRESERVATION COMMISSION

Lowell, Massachusetts, founded in 1826, was this nation's most significant planned industrial city. While most of the developments associated with the advent of the American industrial revolution originated elsewhere, these new forms of technology, power generation, finance, labor, and industrial organization were first combined at Lowell on a scale that portended today's industrialized and urbanized society. Beyond its pioneering history Lowell also offers a unique opportunity to interpret the full socioeconomic, technological, and environmental implications of the industrial revolution--from the city's bright beginnings, through decades of decline, to the present revitalization.

The rebirth of Lowell was envisioned in the early 1960s by a community group proposing that revitalization could be accomplished through the rediscovery of the city's heritage. In 1972 the city council adopted a historical park concept as the focus for future urban development, and city and state officials began channeling funds to support the proposal. In 1975 Congress established the Lowell Canal District Commission,

comprised of federal, state, and city officials, and asked it to prepare a plan for the "preservation, interpretation, development, and use" of the district. Based on the commission's 1977 report, Congress in 1978 established Lowell National Historical Park under the jurisdiction of the National Park Service, and a surrounding historic preservation district under the supervision of the Lowell Historic Preservation Commission. The commission, a new agency of the U.S. Department of the Interior with federal, state, and city representatives, was given a 10-year term to complete its role in the preservation and rehabilitation of the historic district. The state of Massachusetts subsequently established Lowell Heritage State Park, centered on the city's 5.6-mile power canal system. The transformation that followed is one of the great success stories of the revitalization of America's decayed industrial cities in the 20th century, accomplished through a unique partnership of federal, state, and local agencies and the private sector.

The collapse of the cotton textile industry in the 1920s and 1930s had left Lowell with millions of square feet of empty mills and some 70 buildings on the city's rolls for nonpayment of taxes. Chronic high unemployment had reached nearly 13 percent by 1975, driving away many of the city's brightest young people. That year the Lowell Canal District Commission was created. In the ensuing 10 years, \$200 million of public and private funds were invested in Lowell's revitalization, with each public dollar generating an additional private investment of \$14. New construction in Lowell increased by an astounding 1,600 percent in 1983, the largest reported increase in the nation for a city of its size. By 1985 unemployment in Lowell had shrunk to less than 4 percent, and the city's biggest problems--parking, traffic congestion, and a labor shortage--were the problems of prosperity.

The reasons for this dramatic turnaround are many, but all of the ingredients relate to the central themes of cooperation and unity of purpose. Community leaders and local, state, and national officials all shared a new determination, born of desperation, to work together, in partnership with the private sector, to effect the necessary changes. Public roads, transportation systems, and infrastructure had to be readied for growth. State and local policies that worked against older urban areas had to be eliminated. And, most importantly, the community had to change its self-image, embrace its past, and turn its industrial heritage into an asset for future growth. As with the pioneering industrial developments, many of the methods used to rehabilitate the city's infrastructure and finance its redevelopment were first used elsewhere, but at Lowell they were combined in a unique public/private sector cooperative formula that achieved unprecedented success, becoming a classic model for urban revitalization projects.

EPCOT CENTER

EPCOT Center, the Experimental Prototype Community of Tomorrow, was one of the last major projects conceived by Walt Disney, the creative genius of the entertainment industry whose credits range from pioneering

work in animation and other video technology to the development of the theme park as an American institution. At EPCOT Center, Disney envisioned a theme park that would use the hugely successful technologies and management formulas of Disneyland's Magic Kingdom to create an enjoyable educational experience for visitors.

EPCOT's central theme of a world made smaller by technological advances and increasing interdependency is carried out in two parks within a park--Future World and World Showcase. The Future World pavilions allow visitors to explore the land and the seas and new ideas and innovations in communications, energy, transportation, and imagination. The World Showcase pavilions share the accomplishments and cultures of nations from around the world.

True to Walt Disney's vision, the pavilions use a variety of high-technology media to make learning an interesting and entertaining experience. Audiovisual programs include Circlevision films and slide shows presented on 360-degree theater screens; Audio-Animatronics, which involves computer-controlled mechanical characters and stereophonic sound; holograms; fiber-optic displays; and laser light shows. These media are combined with elaborate architectural settings and sophisticated rides and transportation systems to create a complete illusion. The EPCOT pavilions are successful because the quality of the illusion is excellent, absorbing the visitor totally in the experience of the attraction. The mastery of technology and the stagecraft required to create such an experience have become synonymous with the Disney name, along with the management skills required to conceive, design, build, and operate a facility of the scale and complexity of EPCOT.

Corporate sponsors finance many of the individual pavilions at EPCOT and other Disney theme parks. The quality associated with Disney's "imagineering" has enabled them to secure the backing of major corporations such as AT&T, Kraft, Exxon, General Motors, General Electric, Kodak, Sperry, and United Technologies for the pavilions at Future World. The World Showcase pavilions are sponsored jointly by the involved governments and various international corporations such as American Express, Coca-Cola, Mitsukoshi Department Stores, Barton & Guestier, Bass Export Ltd., R. Twining and Co., Telecom Canada, Beck's Beer, and Goebel. The sponsors generally finance the construction of the pavilions and pay an annual fee during the 5- to 10-year life of the attraction in return for prominent exposure of the corporate name or the right to market their products at EPCOT. The Disney designers present a concept and budget to potential pavilion sponsors prior to securing an agreement, and they retain complete artistic, design, and operational control over the attraction. This arrangement has provided Disney with the financial backing to produce its imaginative attractions, and it has apparently served the sponsors well, as evidenced by the number of corporations that have offered to sponsor future pavilions.

ADAPTIVE USE PROPOSAL

NAVY PIER: CHICAGO'S WINDOW ON THE LAKE

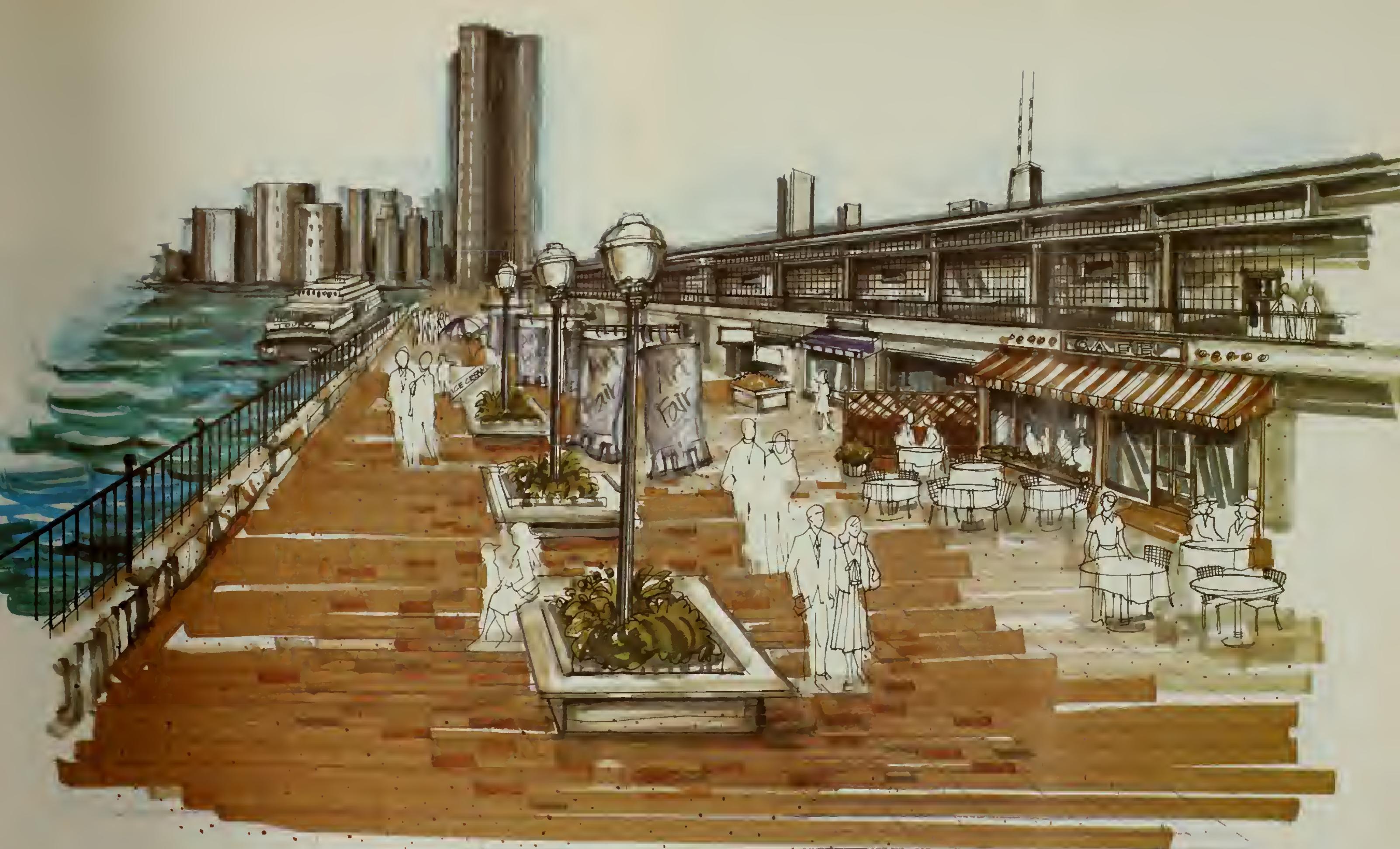
Nowhere in Chicago are the city and lake bound more closely than at Navy Pier. Like a late-afternoon shadow of one of the city's famous skyscrapers, the stately pier structure extends into Lake Michigan for more than half a mile--twice as long as the Sears Tower is high. The pier is a grand passageway for city dwellers seeking to enjoy their greatest natural resource, and it promises to become a landmark urban park and gathering place.

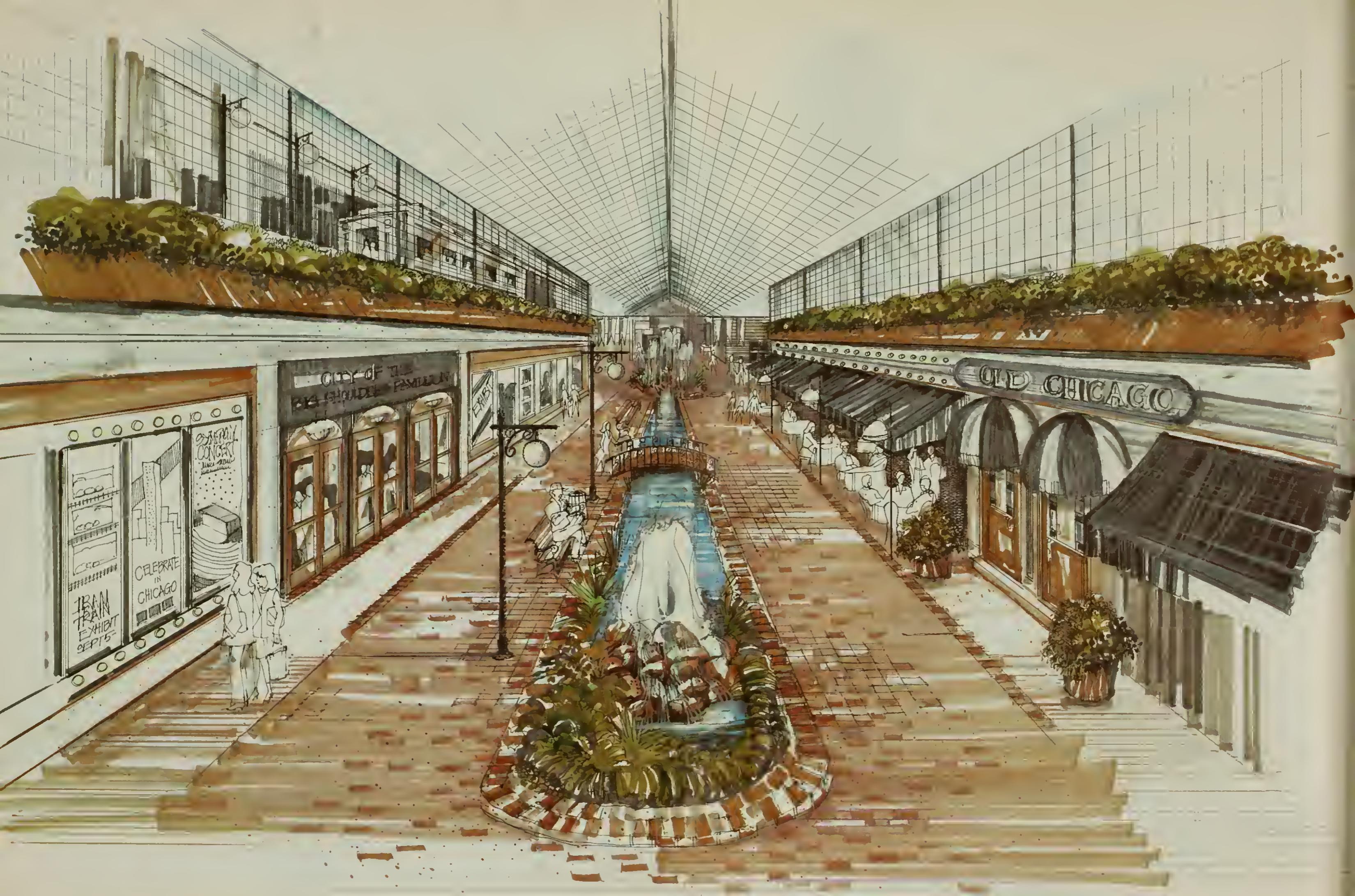
The pier will be a great lakefront playground, and more. Its glass-enclosed interior will be brought back to life as a park with a special view. Through its windows Chicagoans and their visitors will see Lake Michigan--one of the city's principal links with the rest of the world and also a world in itself, still largely unknown to the people living next to it. These same windows will also reflect back on Chicago--the "city of the big shoulders" that has grown to be the prominent commercial and cultural center of the Midwest. People who come to the pier for recreation and entertainment will also learn something, and people who come to learn will have fun doing it. Pavilions interpreting the Great Lakes, the historical development of the Midwest, and Chicago's rich cultural heritage will be interspersed with theme restaurants and shops, a lively marketplace, diverse special events, a winter garden, a carousel--and in summer a chance to get on the lake in anything from a canoe to a shipboard restaurant.

Looking Out

The major attraction at the pier will be Lake Michigan. Boats and historic ships will line the north and south docks, giving the pier a lively nautical atmosphere and enticing people onto the water. Boatownership will not be a prerequisite for enjoying the lake. In addition to marina slips for residents and courtesy docks for visiting boaters, the pier will also offer canoes and pedal boats to rent, charter boats for fishing, a boating and sailing school, boat tours along the city lakeshore, and waterborne excursions to Indiana Dunes National Lakeshore and other distant points.

Pedestrians will have access to Lake Michigan along the shoreline, down the south side of Navy Pier, and also on Dime Pier, which will be reconstructed to further increase opportunities for fishing and sightseeing along the water's edge. A causeway will connect the two piers about one-third of the way down Navy Pier. The large excursion boats will dock along this causeway, and the smaller tour boats and fishing charters will dock at the east end of Navy Pier. Historic ships will occupy the remaining berths on the south side of Navy Pier and the north side of Dime Pier.





The portion of the lake enclosed by the piers and causeway will be filled to create a shallow lagoon suitable for canoes and pedal boats. This safe environment will be used for children's boating classes and leisurely water recreation in summer and for outdoor ice-skating in winter, when the bait and tackle shop will convert to skate rentals. The shoreline at the head of the lagoon will be curved to create a more natural appearance, and it will be backed by open parkland sloping gently toward the water's edge. The south end of this park will be graded to create a natural amphitheater on the edge of the Chicago River. People will be able to sit on the grass and enjoy summer evening concerts with the city's skyline as the backdrop.

The water along the north side of the pier will accommodate a marina with 350 slips for lease on an annual basis and 50 slips for transient boats on a nightly basis. Courtesy docking for day visitors will be available on the south side of Dime Pier.

Looking In

The water theme will carry into the pier structure. The centerpiece of the main entrance plaza in front of the headhouse will be a large water feature. The reverse of a fountain, this feature will flow from the top down, simulating perpetual rainfall. From this source a stream will flow through an enclosed interior courtyard running the length of the pier. The character of the water will change as it flows from one on-pier attraction to another. Near the end of the pier it will build into a second major water feature before emptying into Lake Michigan.

The pier will be a mixture of old and new--an authentic piece of the city's heritage revitalized to serve contemporary society. Entering the rehabilitated headhouse, visitors will immediately get a sense of the structure's past use from large historic photo-murals and other interpretive props that will give a feeling of walking into a busy center of freight handling and passenger service during the 1920s. Information will be available on both levels of the headhouse, along with tour guide services, staging areas for school groups, a nursery, and other visitor services.

Moving through the pier from west to east visitors will pass gradually from historic Chicago, through a modern celebration of Chicago culture, to attractions increasingly oriented to the lake. The pavilions interpreting these themes will be sponsored by private corporations, with innovation and excellence in design promoted through highly publicized competitions. In addition to these pavilions and their attendant restaurants and shops, roughly a third of the building space on the pier, including the entire east-end complex, will be reserved for special events. The programming in this area will cut across all of the pier's themes, offering a great variety of changing contemporary activities.

THE PAVILIONS

City of the Big Shoulders Pavilion and Marketplace

Hog Butcher for the World,
Tool Maker, Stacker of Wheat,
Player with Railroads and the Nation's Freight Handler;
Stormy, husky, brawling,
City of the Big Shoulders--

(Carl Sandburg, "Chicago," 1916)

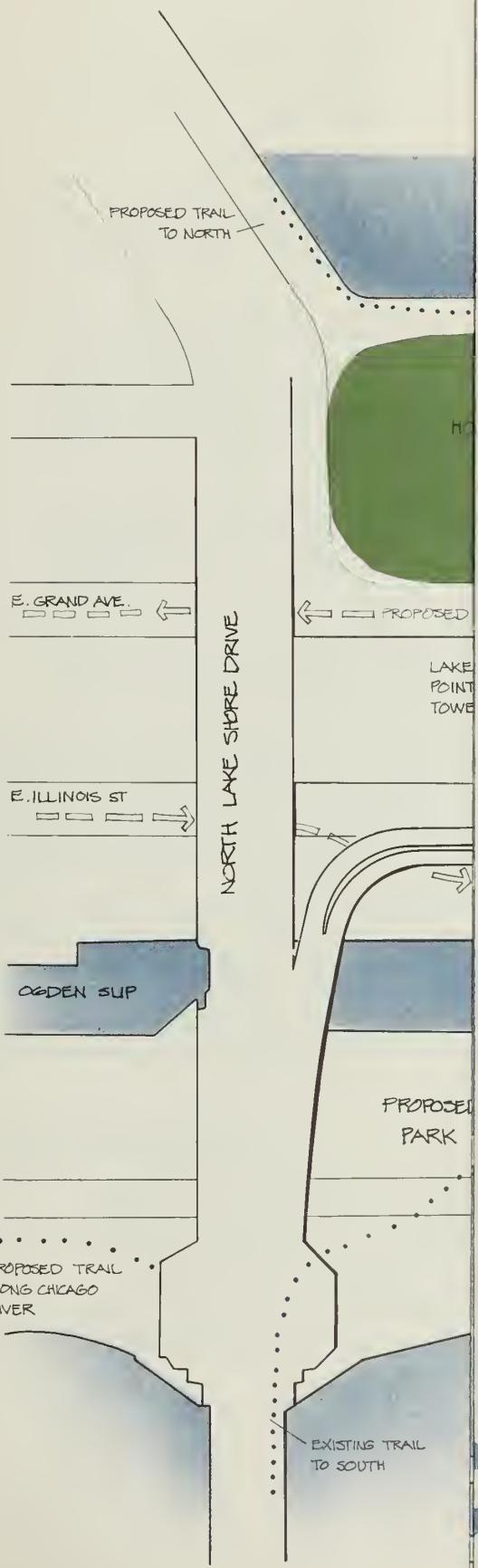
Carl Sandburg's famous poem about Chicago, published the year Navy Pier was opened to the public, will provide the theme for a pavilion that explores the city's preeminent role in the agricultural and industrial development of the Midwest. Chicago was an early competitor for the rich agricultural products coming out of the Midwest, and its rise as the major rail center of North America eventually assured its dominance over the agricultural markets. The Great Lakes, which had made the city a center of water traffic, also contributed to its success as a railroad terminus by forcing all of the northern east-west railroads to converge on this point. As a result Chicago was able to monopolize the trade between the North Atlantic states and the Midwest. The Chicago Board of Trade, organized in 1848, became the greatest speculative grain and provisions market in the world, and its future prices are still the basis of cash prices wherever farmers sell. A closely related enterprise was meat packing and its affiliated trade in livestock and livestock futures on the Chicago Mercantile Exchange. At the turn of the century slaughtering and meat packing were the city's most profitable industries.

Chicago also grew to be a major center for steel production and manufacturing. Iron ore was barged to the steel mills on the lakeshore, and the steel was made into farm machinery, tools, rails, rolling stock, and other products important to the region. Chicago surpassed Pittsburgh in steel production in the 1950s, and today it ranks second only to New York as a manufacturing center.

1

This theme will be attractive to numerous corporate sponsors that have long associations with Chicago: Swift Independent, the Chicago & North Western, the Burlington Northern, the Union Pacific, and the Santa Fe railroads, U.S. Steel, Inland Steel, International Harvester, Pullman-Standard, General Motors, Dart and Kraft, Beatrice Foods, Quaker Oats, and innumerable others. The potential range of exhibits and audiovisual programs is great, as indicated by the following list of possibilities:

"The world's largest model railroad"--an authentic representation of the greater Chicago rail yards and passenger terminals, with main lines converging from across the nation (Boston, New York, Philadelphia, and Baltimore to the east; Memphis, Mobile, New Orleans and Galveston to the south; Omaha, Kansas City, Denver,



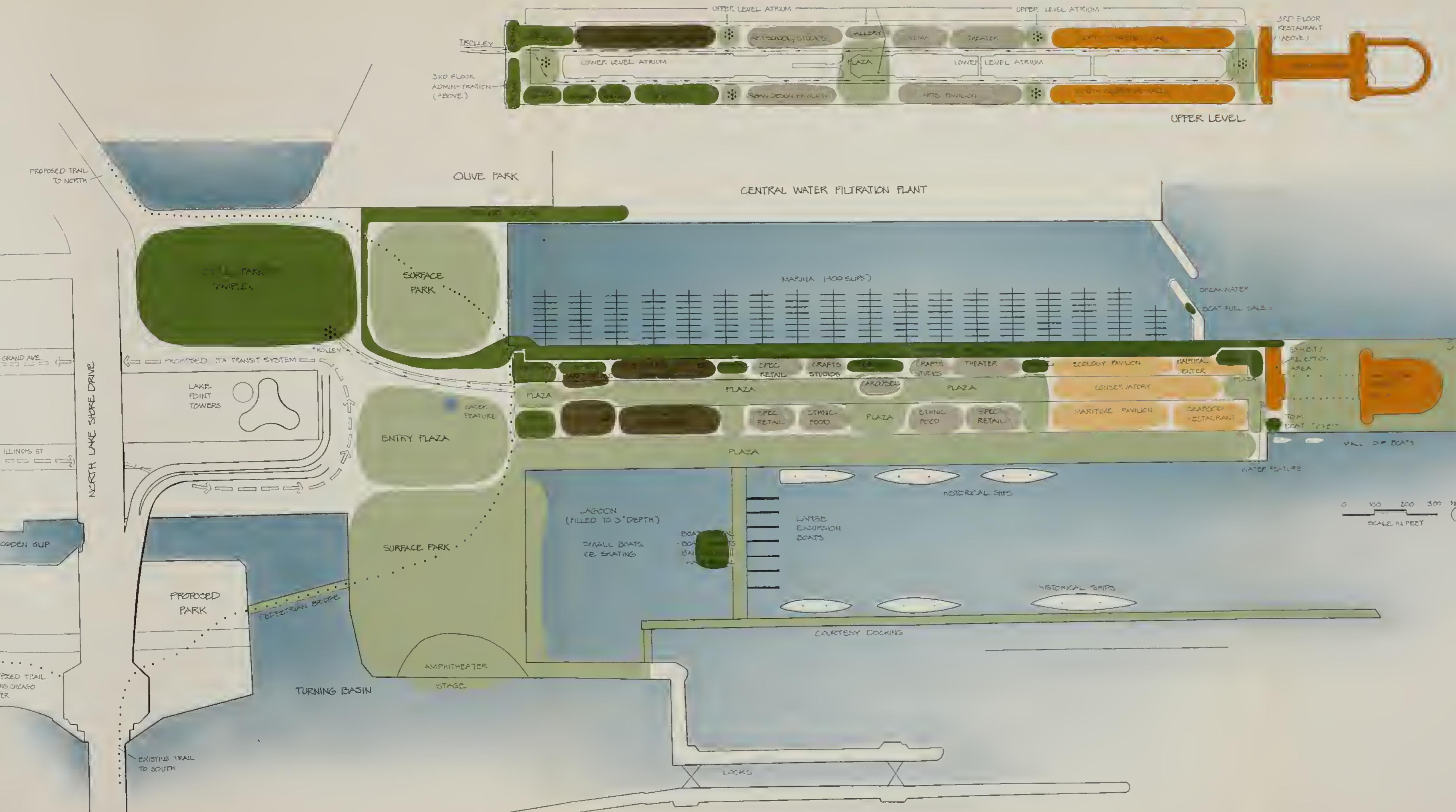
LEGEND

- CITY OF THE BIG SHOULDERS PAVILION
- ARTS AND URBAN DESIGN PAVILION
- GREAT LAKES PAVILION
- SPECIAL EVENTS
- PARKS AND PLAZAS
- SUPPORT SERVICES
- TRANSIT STOP
- PEDESTRIAN ROUTE
- TROLLEY LINE
- PROPOSED CTA TRANSIT SYSTEM

NA-CNP/2007 SEPTEMBER 1986 U.S. DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

WINDOW ON THE LAKE

chicago's
NAVY PIER



Chicago's NAVY PIER

WINDOW ON THE LAKE

NAVY PIE

NAVY PIER

 NAVY PIE

Los Angeles, and San Francisco to the west; and Minneapolis, Fargo, and Seattle to the north). This system has routinely handled 35,000 freight cars and 550 passenger trains per day.

A walk-through exhibit of historic engines and railroad cars, perhaps including some of the early cars built by the Pullman Palace Car Company of Chicago.

A live video program from the Chicago Board of Trade and Mercantile Exchange, showing the day's activities in the pits. This could be accompanied by an interpretive program about how the commodity markets work, perhaps including an interactive computer simulation that allows visitors to play the market for fun.

A theater-in-the-round where visitors could experience the activities of a steel mill, the old Chicago stockyards, and other impressive places. These and similar adventures could be woven into rotating feature films about the steel industry, the livestock industry, the mechanization of agriculture, and related topics.

A rotating exhibit, sponsored by a group such as the Chicago Association of Commerce and Industry, where corporations could showcase their achievements and amaze visitors with previews of the future.

The story of "What Americans Eat" and how we have changed, using computer technology to help people analyze their own diets.

The City of the Big Shoulders theme will be complemented by a large city marketplace containing a farmers' market, ethnic food vendors, and booths for sales of antiques and other goods. The marketplace will be located just east of the headhouse, where it will impart the feeling of a bustling waterfront commercial center at the point where visitors first enter the pier. In this location the market will be easily accessible, and it will attract sellers and buyers from across the city. More traditional retail space will be clustered near the transit stop. The shops and restaurants in this part of the pier will feel like old Chicago. For example, a Roaring Twenties restaurant with a speakeasy lounge could occupy a portion of the second level of the south shed, overlooking the south promenade and lagoon.

Urban Design Pavilion

Make no little plans, they have no magic to stir men's blood and probably themselves will not be realized. Make big plans; aim high in hope and work, remembering that a noble logical diagram once recorded will never die but long after we are gone will be a living thing, asserting with growing intensity.

(attributed to Daniel Burnham, author of the 1909 Plan of Chicago)

No other city in America represents the tradition of urban design better than Chicago. The brilliant plans of Daniel Burnham created the foundation for a city "both practical and beautiful." Burnham's greatest gift to Chicago was the vision to reserve the lakeshore as public park space for enjoyment by all the city's residents. Chicagoans paid him the great tribute of teaching the basic principles of his 1909 Plan of Chicago in the city's public schools. Many of the features of this plan were implemented after Burnham's death, including the construction of Navy Pier in 1916.

The city's intense interest in its architectural fabric and design was partly an outgrowth of the lesson learned from the great fire that destroyed Chicago in 1871. The need to rebuild much of the city attracted and inspired many outstanding architects and designers, including John Root, Augustus Saint-Gaudens, Louis Sullivan, Frederick Law Olmsted, William Jenney, and Frank Lloyd Wright. The first skyscraper--a term synonymous with Chicago--was built in 1885. In 1893 the city hosted the World's Columbian Exposition with such style that it marked a major turning point in American architecture and city planning.

Throughout the 20th century Chicago has continued to be a pacesetter in urban design. It is the home of the American Planning Association, the Urban Land Institute, and numerous major planning, architectural, and engineering firms. These organizations and businesses could support a series of exhibits and audiovisual programs that might include the following:

A feature film on the history of American architecture, illustrating and describing how our taste in architecture has changed with our changing life-styles.

Scale models of famous buildings representing major architectural styles. Visitors could be invited to "play with blocks" to recreate classic styles and to invent their own creations.

The exhibit "150 Years of Chicago Architecture," which uses photographs, models, and historic fabric to provide an overview of the rich architectural heritage of the city.

An exhibit about urban planning, highlighting Burnham's Plan of Chicago.

Rotating exhibits featuring the works of Chicago's landmark architects and North America's best contemporary architects.

An exhibit about the city of tomorrow, interpreting trends in housing, workplaces, and transportation through artists' drawings and models.

The urban design pavilion will be a natural transition between the themes of Chicago commercial history and Chicago arts.

Arts Pavilion

Art comes to you proposing frankly to give nothing but the highest quality to your moments as they pass.

(Walter Pater, The Renaissance)

The arts pavilion will celebrate Chicago's cultural vitality. It will combine spaces for the performing and visual arts into a lively center where sculptors, dancers, painters, actors, musicians, artisans, and other artists can work together, exposing visitors to all facets of the creative process. Chicago institutions such as the Art Institute and the Museum of Contemporary Art could work with Chicago's major communications, broadcasting, and publishing corporations to develop the following attractions:

An art school, such as the School of the Art Institute, which will provide instructional programs. Studios will be available for classwork, and students will display and sell their works in the pavilion's gallery, perform in the pavilion's theater, and present their films and videos in an on-pier cinema.

A theater for audiences up to 450 people, adaptable for a variety of plays, recitals, concerts, and lectures. Emphasis will be on the special and the unique and on providing a learning ground for aspiring actors, musicians, and other performers.

A cinema for educational and foreign films, slide shows, and other programs requiring audiovisual equipment. The cinema and the theater will be adjacent to the special events space, and their programming could be coordinated with particular ethnic festivals or other special events.

A large museum, such as the Museum of Contemporary Art, containing a significant permanent collection along with constantly changing exhibits devoted to all aspects of art.

The central courtyard in this portion of the pier will open into a large two-story plaza graced by an old-fashioned carousel, reminiscent of the one that historically was on the east end of the pier. The carousel will carry the themes of color, rhythm, and music from one side of the pavilion to the other. Visitors will watch artisans at work in a series of craft studios on the plaza. Shops and galleries will feature the works of artists and craftspersons. A large food court will feature a variety of ethnic restaurants representing the rich cultural heritage of the city.

Great Lakes Pavilions

Lake Huron rolls Superior sings
in the rooms of her ice water mansions
Old Michigan steams like a young man's dreams
the islands and bays are for sportsmen
and further below Lake Ontario
takes in what Lake Erie can send her
and the iron boats go as the mariners all know
with the gales of November remembered--

(Gordon Lightfoot, "The Wreck of the Edmund Fitzgerald")

The five Great Lakes, together making up the largest body of freshwater in the world, are one of the major natural features of the earth. Yet most people's knowledge of them is quite limited. Two independent but closely related pavilions will explore the ecology and maritime history of the lakes, promoting the wise use and conservation of these outstanding natural resources.

Ecology Pavilion. The ecology pavilion will describe how natural resources have influenced people's activities and how people in turn have changed their environment. The glaciation that gouged out the lake basins some 18,000 years ago also developed the soils that made the area just south of the lakes the world's most productive agricultural region. Iron deposits on the upper lakes supported industrial development to the south. The lakes and rivers provided the transportation routes for raw and finished materials. Thus, the geologic past set the stage for the economic future.

Because of differences in depth, temperature, and water-cycling times, each lake has its own distinctive ecology. The fish inhabitants vary, and so do the lakes' sensitivities to pollution. Shallow Lake Erie has historically had the worst pollution problems, but deteriorating water quality has been a widespread concern that has led to concerted--and largely successful--efforts to clean up all the lakes over the past several decades. The Great Lakes fisheries have changed considerably over the past century. Commercial fishing, once a major industry, was destroyed by the invasion of the sea lamprey in the 1930s. This predatory eel decimated the lake trout populations in Lakes Huron and Michigan before it was finally controlled in the 1960s. Since then, trout restocking programs and the successful introduction of coho and Chinook salmon have reestablished valuable sports fisheries in the lakes.

The terrestrial ecosystems surrounding the lakes have adapted to particular soil and climatic conditions. The lakes region is an ecotone between the dense forests to the north and the fertile prairies to the south and west. The lakes have a considerable influence on the weather over large parts of the United States and Canada. They generally moderate air temperatures, but they also cause substantially greater

precipitation in some locations. Storms blowing across the lakes can be a deadly hazard to large as well as small craft.

Chicago institutions such as the Field Museum and the Shedd Aquarium could develop this pavilion with sponsorship by sporting goods manufacturers and distributors. Government agencies involved in Great Lakes research and conservation could also participate in this pavilion. Possibilities for exhibits and media programs include the following:

An animated time-lapse view of geologic activity in the Great Lakes region, showing mineralization, the advances and retreats of the glaciers, the deposition of soils, and river and lake formation.

A large three-dimensional hydrologic model of the St. Lawrence River, the Great Lakes, and the Mississippi River systems. Water flowing through this model could demonstrate the relationships between the lakes, the need for locks, and how pollutants and exotic species move through the system. The model could also show the relative depths of the lakes.

An aquarium of Great Lakes fishes, identifying which species are threatened by pollution or competition with exotics and which are the most desirable sports fish. A video screen incorporated into this exhibit could provide additional information about the changing Great Lakes fisheries.

A conservatory of native regional plants. Planned for a large two-story space between the sheds, the conservatory could be an attractive year-round garden. It might also contain an aviary of native birds.

A weather theater, where visitors could learn how the lakes affect the weather and how predictions are made. Time-lapse photography could illustrate different weather patterns, including an impending storm. A sound-and-light show could add thunder and lightning, and the wind might even blow.

Maritime Pavilion. When most people think of maritime history they think of the New England merchants and whalers, or the Pacific or Gulf coast fishermen. Few people are aware of the deeds and the lore of the Great Lakes mariners. The maritime history of the Great Lakes region began with the French explorers, who by 1682 had sailed from the St. Lawrence River across the Great Lakes to the southern tip of Lake Michigan, found the headwaters of the Illinois River, and followed it by canoe to the Mississippi River and the Gulf of Mexico. For the next 150 years frontier trappers and traders regularly traversed the "Chicago Portage" between the two major waterways. In 1848 the Illinois and Michigan Canal was completed and Chicago was soon firmly established as the chief grain-shipping center for the United States. The canal traffic peaked after the Civil War, when roads and railroads began to compete heavily with the shipping industry. Nevertheless, shipping remained strong, and Great Lakes tonnage tripled between 1870 and 1900. The sailing ship era

peaked in the 1860s and 70s, although steamers had entered Lake Michigan by the 1840s. The Christopher Columbus, a steamer that entered service from Chicago, was said to have carried more passengers during her career (1892-1936) than any other ship afloat.

During the second half of the 19th century the Lake Superior region was developed as the country's major source of iron ore. Giant ore boats, designed specially to meet the conditions on the Great Lakes, were developed to carry ore to the steel plants in Chicago and Gary. Shipping on the Great Lakes has always been hazardous, and not even modern technology has made it safe, as evidenced by the sinking of the Edmund Fitzgerald, the largest ore boat in the American fleet, in 1975 in Lake Superior.

Development of a pavilion to recount this history would realize the goal shared by the Great Lakes Naval and Maritime Museum and the Chicago Maritime Society to provide a regional museum devoted to the interpretation of Great Lakes maritime history. Chicago corporate sponsors interested in underwriting this pavilion might include iron-ore shippers, steel companies, and marine equipment manufacturers. This pavilion could be a multimedia attraction with possibilities including the following:

Historic sailing ships and steamers docked along the pier.

A simulated boat ride from Quebec to New Orleans. Similar to the attractions at Disney's EPCOT Center, this ride would physically transport visitors into another time and place, allowing them to experience an epic journey along the country's two greatest waterways. The passengers would board boats that would carry them, by way of audiovisual impressions, along the St. Lawrence River into Lake Ontario, through the locks around Niagara Falls into Lake Erie, through the South Passage into Lake Huron, through the Straits of Mackinac into Lake Michigan, and through the Chicago Sanitary and Ship Canal into the Des Plaines, Illinois, and Mississippi rivers.

A canoe-building or ship-building exhibit.

Stories by mariners, also the songs they sing.

A memorial to the ships that have wrecked on the Great Lakes.

The Great Lakes themes will be complemented by a seafood restaurant featuring lake fish and by a nautical center associated with the marina. The center will include a chandlery, where visitors can purchase marine supplies, and a boating and sailing school, where they can learn the skills needed to pilot their own craft on Lake Michigan.

Special Events

In our contemporary society, and for the future, we must take into consideration why people live in cities, and why we come together, and how the city can encourage this right of assembly in a meaningful way. We must bring to bear the creative, imaginative spark . . . and recognize the Pier . . . as a symbol that is capable of enriching our urban way of life and the culture of the country.

(John David Mooney, Chicago Artist and Urban Designer)

The pier has become famous for the scale and lavish display of the special events it accommodates. The attractive lake-oriented rooms in the east-end complex, the expansive upper sheds, and the large open-air promenades attract the promoters of fairs and exhibitions and inspire them to excel in their production. Among the pier's most notable events are the Pageants of Progress that were staged in 1921 and 1922. The second pageant was as ambitious in scope as a small world's fair and attracted two million visitors over a period of 17 days. Today this tradition continues with events such as the International Art Expo, which attracted more than 40,000 visitors over a long weekend in 1985. Six major events are scheduled for the summer of 1986. The pier is expected to become increasingly popular for special events and to support a year-round schedule once it is rehabilitated with an all-weather courtyard, covered parking, public transit connections, an on-pier transportation system, and food service. Special events will complement all the themes presented on the pier by providing a lively, ever-changing, and contemporary perspective on the city by the lake and the people who live here.

STRUCTURE AND SETTING

The landward setting for the pier, once the weak link in the city's lakefront park system, will be transformed from parking lots into an inviting green space with new trails connecting to parklands on the north and south. On the south a landscaped park will provide views of the city skyline, the peninsula containing the Adler Planetarium and Shedd Aquarium, and the lagoon and historic ships between Navy and Dime piers. To the north, directly in front of the headhouse, the parkland will give way to a formal entry plaza for the pier. North and west of this plaza a new structure housing a parking garage and hotel will step down from Lake Shore Drive, overlooking the lake to the east and the city to the north. A pedestrian promenade and greenbelt will be retained between the hotel structure and the lakeshore to ensure public access to the shoreline overlooking the marina to the east and the Gold Coast skyline to the north.

The historic trolley system will be revived to provide public transportation on the pier. The trolleys will pick up visitors at the

parking garage and entry plaza, then ascend up a ramp to the second level of the headhouse as they did historically, travel around the trolley decks above the courtyard between the sheds, and descend back to the street level. The trolleys will stop at several places along the pier where elevators and escalators will take visitors from one level to the other. As the Chicago Transit Authority plans are implemented, the trolleys could also be linked with a light-rail transit system in the North Loop area, thus providing direct transit access from other parts of the city.

The most appropriate architectural treatment for this historic structure will be to preserve its overall exterior configuration and unique ornamental/industrial character, while completely rehabilitating the interior. The headhouse and the buildings that make up the old east-end recreation complex, the pier's most notable features, will be altered as little as possible; however, the sheds will have to be torn down to the steel skeletons and rebuilt, taking care to perpetuate the pier's general profile and exterior appearance. Year-round use of the pier will be supported by enclosing the long courtyard between the sheds with a glass dome.

A badly deteriorated garage constructed near the headhouse during World War II and the transit sheds added to the south dock in the late 1950s will be removed. Cleared of these miscellaneous structures, the south dock will become an expansive outdoor promenade, taking full advantage of its sunny location, excellent views of the lake and the Chicago skyline, and shelter from the north winds. The south promenade will connect with the courtyard between the sheds by way of a large central plaza near the center of the pier and two smaller plazas immediately below the second-story transit stops. Also, some of the cafes and shops in the south shed will spill onto the outdoor promenade, encouraging people to move freely from one part of the pier to another. The north dock will be reserved for service vehicles and access to the marina.

The keys to the success of this venture will be the quality of its design and programming. The excellent models studied for this project share a common vitality based in part on the attractiveness and functionality of their public spaces and in part on the broad appeal of their activities.

DEVELOPMENT AND OPERATION

Development and operation of the revitalized Navy Pier will be accomplished by a partnership of public agencies and the private sector. The first step will be selection of the public manager, which could be an intergovernmental commission. Government agencies could participate under any one of the four management alternatives described in part two of this document.

The public manager will be responsible for preparing a detailed action plan that describes a use concept, defines the physical and functional areas of responsibility for development, funding, and operation by the public and private participants, and specifies the development process





and phasing for the project. Gradual development will be required to keep pace with utility, street, and transit improvements in the surrounding area.

The total capital cost of implementing the proposal will be approximately \$337.6 million (see table E-1 in appendix E). This is an order-of-magnitude estimate based on the square footage costs of work performed on similar projects. The estimate includes the costs of stabilizing the pier to prevent further deterioration and repairing the infrastructure (sewage system, pier substructure, building structural systems, etc.).

It is assumed that all costs for stabilization and most costs for infrastructure repairs will be financed by government sources. The parklands surrounding the pier, the marina and other docking facilities, the entrance plaza, and the outdoor promenades on Navy and Dime piers have also been identified as government-financed facilities to provide for public park and recreational use. Figured this way, the public costs will total approximately \$115.9 million.

The entire hotel/parking complex and the infrastructure repairs most closely related to private adaptive use of the on-pier structures (mechanical and electrical systems, replacement of walls and glazing, interior renovation, etc.) will be borne by the private developer. The estimate in table E-1 includes the costs of most private uses and the basic interior renovation and utility connections for the pavilions, but the interior finishes and specific attractions of the pavilions have not been estimated. The trolley system has also been included as a private cost because of its function as a link between the hotel/parking complex and the pier, and because of the need to integrate the on-pier transportation system into the design, construction, and operation of the pier attractions and private uses. The private costs will total approximately \$221.7 million.

The magnitude of the project will require an incremental development process. The logical next step following completion of the plan will be repair of the pier infrastructure and development of the public park spaces and water-related facilities. These improvements, to be accomplished by the public manager, will encourage immediate public use of the pier and allow for some revenue-generating activities (marina operation, special events) in the earliest years of development.

Concurrently with the initial public investments, the public manager will initiate a call for proposals from the private sector for the on-pier pavilions. A two-stage process will be used: The first stage will focus on the identification of serious, viable, and appropriate proposals. Proponents will then be selected for the second stage, which will be primarily a design competition, but with a specific financial component, to select the most imaginative and feasible proposal for each pavilion.

As soon as the pavilion developers are selected, the public manager will initiate a separate, similar call for proposals to select a master developer for the on-pier structures, the hotel/parking complex, and the trolley

system. The call for proposals will specify the public manager's commitments to repair the infrastructure and develop the site and the surrounding water areas. The selected pavilion proposals will also be described, thus allowing proponents for the master developer's role sufficient information to evaluate the attractiveness of the investment. As with the pavilion proposals, an important criterion for selection of a master developer will be the quality of design. The public manager will retain control over design and construction to ensure the completion and overall quality of the project.

To help fund the public development costs, a tax-increment financing district will be formed to return all sales, hotel room, soft drink, and other taxes collected from pier activities to the public manager. The estimated annual sales and net revenues from pier activities are listed in table E-2 in appendix E. Based on these figures, approximately \$5 million in annual sales and hotel room tax revenues could be returned to the pier capital improvements fund. The fund will be used first to pay back public development costs and the estimated revenue could service over \$50 million in 20-year revenue bonds. The next priority for this fund will be cyclical maintenance and eventual replacement of capital facilities. Finally, any surplus funds will be used for annual operations and maintenance. The remaining public costs not retired by pier revenues will need to be funded from direct appropriations, general obligation bonds, or other sources.

Based on the estimates shown in table E-2, the developer's annual net revenue of approximately \$19.1 million will result in a before-tax return of 8.6 percent on an investment of \$221.7 million. These are preliminary estimates based on industry standards and Chicago-area averages for the business activities included in the proposal; actual revenues could differ significantly. The estimates do indicate a potential need, however, for tax incentives or special financing techniques to improve the attractiveness of the pier as a private investment. Special-issue tax-exempt bonds could be used to lower the developer's cost of capital. The developer could also benefit from the federal tax incentives currently available for the rehabilitation of historic structures on the National Register of Historic Places if the lease term is 15 years or longer and if the rehabilitation work is certified by the secretary of the interior. The plan for revitalization of Navy Pier should explore all available means of packaging the private development for the project to ensure that the investment opportunity is attractive enough to interest qualified, experienced developers.

APPENDIX A: AUTHORIZING LEGISLATION

99TH CONGRESS
1st Session

HOUSE OF REPRESENTATIVES

REPT.
99-236

MAKING SUPPLEMENTAL APPROPRIATIONS FOR THE
FISCAL YEAR ENDING SEPTEMBER 30, 1985, AND FOR
OTHER PURPOSES

July 2, 1985.—Ordered to be printed

Mr. WHITTEN, from the Committee of Conference,
submitted the following

CONFERENCE REPORT

[To accompany H.R. 2577]

NATIONAL PARK SERVICE

Within existing funds \$250,000 is made available for a study of the feasibility and desirability of making Chicago's Navy Pier a recreational and cultural unit within the National Park System under the operating jurisdiction of a commission made up of persons appointed by the Mayor of Chicago and the Secretary of the Interior or persons appointed by the Mayor of Chicago, the Governor of Illinois and the Secretary of the Interior with appropriate cost-sharing by Federal and city or Federal, State and city governments. In making the study, the National Park Service shall consult and cooperate with the Mayor of Chicago, the Governor of Illinois and other appropriate public officials. Consultation may also be had with schools of design and architecture, symposia and forums on the subject, including a review of the Mooney plan, and including the prospective costs, and means of financing such costs whether private, public or both; and to report back with its findings within six months to the appropriate Committees of the Congress. The study should address the appropriateness of a commission to facilitate State, local and Federal cooperation such as exists with the Illinois and Michigan National Heritage Corridor Commission and the Lowell National Historic Preservation Commission. The model of the cooperative arrangement between the Federal government and the State of New Jersey to protect and preserve the Pinelands areas may also be useful.

APPENDIX B: PHYSICAL EVALUATION OF THE PIER

CURRENT CONDITION

The following evaluation of the condition of Navy Pier and related structures is based on a field inspection of November 5 and 6, 1985, a review of existing reports, a study of existing drawings, and discussion with architects and engineers from the Chicago Department of Public Works. The evaluation is general because time did not permit a detailed evaluation.

Structural Elements

Recreation Complex. The auditorium and the recreation, shelter, and terminal buildings are steel framed with reinforced concrete floors and are supported on wood piling. The exterior walls of the buildings are brick masonry. These buildings were rehabilitated in 1976 and are in good structural condition with minor exceptions. Corrosion of the reinforcing rods has caused the concrete to spall in the upper-level concrete slabs of the auditorium tower structures. It is suspected that the ceiling of the auditorium contains asbestos fibers, based on its appearance and the date of application.

North and South Sheds. The sheds are two-story structures approximately 99 feet wide by 2,350 feet long. The sheds are six bays wide, and each bay is 16'6" in width. The roofs are supported by steel-framed gable trusses. The second stories are reinforced-concrete slabs supported by concrete-encased steel beams and columns. The first floors are reinforced-concrete slabs supported by reinforced-concrete beams. The sheds are supported on wood piling.

The structural condition of the sheds ranges from good to very poor. Generally, the portion of the structures protected from the weather is in better condition. The steel-gable trusses, 20'0" on center, that support the roofs are in good condition. Water intrusion has caused severe corrosion of the steel girts located 8 feet above the second-floor levels. Additionally, some roof purlins have corroded because of roof leakage.

The floor structures of the second stories are in various stages of deterioration. Water intrusion has occurred at the shed roof edges. This has caused cracking and spalling of the concrete encasing the steel beams and corrosion of the beams at these column lines. Near the west ends of the sheds horizontal cracking has occurred between the concrete slab and the tops of the beams. This cracking occurs at nearly every column line and extends along approximately 200 linear feet in both sheds. The exterior bays of the second-story slab structures are in poor condition. Water intrusion, especially through the expansion joints of these exposed decks, has caused severe corrosion of the steel support beams and columns, as well as the usual cracking and spalling of concrete. Shoring has been added in some locations. The steel lintels

that support the deep concrete encasements at the outermost column lines display permanent deflection due to water intrusion.

Because of difficulty of access, the first-floor structures were not inspected from the underside, and their condition is not known. The wood piling that supports the sheds was not inspected either. In 1958 the shed foundations were underpinned under a contract with the Chicago Department of Public Works. This work consisted of removing a portion of the deteriorated wood piling at the waterline and replacing it with steel columns encased in concrete. In 1983 the shed piling was exposed and inspected by city engineers at three locations. The piling support system was found to be in good condition at those locations, and it is assumed that the remainder is in good condition as well. However, it is recommended that the condition of the shed piling and first-floor structure be thoroughly investigated before major rehabilitation work is done.

Headhouse. The structural framing for the headhouse is generally concrete-encased steel beams and columns with reinforced-concrete floors. The building is supported on wood piling and has brick-masonry exterior walls.

The condition of the structural steel supporting the main building cannot be determined because it is encased in concrete and masonry. The steel supporting the cupola roof of the towers has been damaged by water. The steel members supporting the entrance roadway on the second floor between the towers are in poor condition. These members are badly corroded and have been temporarily shored. The concrete slab is severely damaged in this area also.

Large cracks exist in the exterior brick masonry. These cracks are especially prevalent near the northwest and southwest corners of the building. Extensive repair or replacement of the masonry is required in these areas.

Because of difficulty of access, the first-floor structure and wood piling of the headhouse were not inspected. Drawings indicate that the top of the piling is below lake level, where it most likely has been preserved. However, it is recommended that the piling and the first-floor structure be thoroughly investigated before major rehabilitation work is done.

Other Structures. A 260-foot-long by 23-foot-wide ramp situated west of the headhouse connects the street to the second-level roadway. The ramp is a steel-framed trestle-type structure supported on wood piling. Severe corrosion has occurred in the steel support beams and columns, and the ramp is temporarily shored to prevent collapse. Complete replacement is required.

A 10-foot by 10-foot by 292-foot-long bypass tunnel was constructed near the western end of the pier to allow water circulation underneath. Drawings indicate that the tunnel is constructed with sheet-pile sides and a concrete cap. Previous underwater inspection revealed that the tunnel

is completely deteriorated and nonfunctional. It will have to be rehabilitated to allow water exchange and to disperse pollutants.

According to the original drawings, a 7½-by-18½ foot concrete dock is located along the perimeter of Navy Pier. This dock is supported vertically by three rows of wood piling. A row of wakefield sheet piling is located near the water face of the dock to retain backfill material. The sheet piling is anchored near its top to the rows of wood piling by 1-3/4 inch diameter anchor rods. In the late 1950s a 100-foot-wide extension was added on the south side of the pier using a wood-piling support system.

Underwater inspection by American Diving and Salvage Company and PreAkt Concrete Company showed that the exposed concrete, the wakefield sheeting, and the outside row of wood piling are deteriorating at the waterline. Deterioration is occurring around the entire perimeter of the pier, but it is most severe along the eastern third, where voids exist between the top of the sheeting and the concrete dock, allowing fill material to be washed out. Additionally, the sheeting is leaning outwards, which may indicate that the anchor rods are no longer effective. Two rows of timber fenders initially existed along the face of the concrete dock. These are missing or damaged in most locations.

The two large rectangular transit sheds on the south side of the pier are framed with concrete-encased steel beams and columns and supported on wood piling. The transit sheds were constructed in the late 1950s and are in good structural condition.

Mechanical Systems

Recreation Complex. The systems serving the recently rehabilitated auditorium, recreation and shelter buildings, and the first two floors of the terminal building appear to be adequate and in good condition for the present limited use. The steam-and-cooling plant serving this complex, located in the east end of the south shed, similarly appears to be adequate and in good condition. The solar system is apparently inoperative.

North and South Sheds. Both the HVAC and the plumbing systems are in very poor condition and will have to be completely replaced for any type of rehabilitation. The fire protection systems (dry-pipe sprinkler and standpipe/hose) appear to be adequate in some areas but deteriorated or missing in others.

Headhouse. None of the mechanical systems in this building are salvageable. There is a sewage lift station in the basement that does not seem to be ventilated.

Electrical Systems

Recreation Complex. The electrical system is in good condition. There is a considerable amount of temporary wiring along the ceiling of the walks around the periphery of the auditorium.

North and South Sheds. The city-owned main distribution panelboard failed in January 1985. This piece of equipment is obsolete, does not meet present-day codes, and should not be repaired. Its failure brought down all the city-owned transformers in the sheds. Emergency power was obtained from three transformer installations owned by Commonwealth Edison Company. The wiring used to obtain the emergency power is deficient and does not meet code. The total capacity of these three transformer installations is approximately 1,750 KVA, which is more than adequate to service the present limited use of the sheds.

There are eight city-owned transformer vaults in the sheds, four in the north shed and four in the south shed. Each vault contains two 75-KVA oil-filled transformers and one 150-KVA oil-filled transformer. These vaults, which also are city owned, were installed as part of the original construction and are approximately 70 years old. In this period of time, the oil in the transformers has probably been changed on more than one occasion. Since Askeral (PCB and TCB) came into use around 1960, there is a chance that this contaminant is present.

Headhouse. The electric-service panelboards in the south tower are of 1916 vintage. Although seemingly in good condition, they are illegal and dangerous by today's codes. The rest of the building is an electrical nightmare.

STABILIZATION REQUIREMENTS

The following work is needed immediately to repair conditions that are causing the deterioration of building fabric or that pose potential threats to public health and safety. An itemized cost estimate for this work is provided in table D-1 in appendix D.

Structural Elements

Recreation Complex. The recreation complex needs only minor repairs to the roof, railings, and masonry to ensure its long-term preservation. The ceiling in the auditorium should be checked for asbestos, and that material should be removed if present.

North and South Sheds. The extensive roof leaks should be abated, even if the sheds are not used, to stop water infiltration and prevent further deterioration. Also, all openings in the exterior walls should be sealed to avoid accelerated weathering of the interior surfaces. The fire doors should be repaired.

Headhouse. The roof leaks should be abated to stop water infiltration. Also, this structure requires extensive masonry repair to stabilize the exterior walls.

Mechanical Systems

The following work is required to adequately support the present limited use of the structures. Adaptive uses will require new mechanical systems designed to support the particular use or uses.

Recreation Complex. The only necessary work is the removal or relocation of the emergency generator diesel-fuel tank now located under the stage in the auditorium. Its current location presents a fire and safety hazard jeopardizing the auditorium and anyone using the facility.

North and South Sheds. None of the mechanical systems requires any work to support the present limited use of the sheds.

Headhouse. No work is necessary since this building is not currently used.

Electrical Systems

Recreation Complex. The whole complex (four buildings) requires a unified fire-alarm system, since it is occasionally used for special events. Also, the temporary wiring around the auditorium should be replaced by permanent wiring.

North and South Sheds. The wiring used to obtain emergency power, which is deficient and does not meet code, must be replaced. Also, the transformers should be checked for Askeral, and if it is found, it should be drained and removed. Refilling is not required since the transformers are not in use, are not required for the present limited use of the sheds, and will probably be replaced if the sheds are rehabilitated.

Headhouse. The electric-service panelboards in the south tower should be replaced. The old panelboards should be saved for their historic value. All circuits not in use should be disconnected when the new panelboards are installed. Wiring for circuits in use should be inspected, and the deficient wiring should be replaced.

APPENDIX C: VISITOR USE AND FACILITY DEMAND PROJECTIONS, ADAPTIVE USE ALTERNATIVES

VISITOR USE LEVELS

Annual visitation forecasts for each alternative were based partly on visitation records for existing urban recreational and cultural facilities and partly on the forecasts in the Rouse Company proposal. The Rouse plan was most valuable in predicting visitation associated with commercial activity on the pier. However, these estimates were developed more conservatively for the alternatives in this study, since commercial activity is no longer intended to be a major draw for the pier as it was in the Rouse plan. The estimates for total use are itemized in table C-1 according to how many people each major kind of activity would be expected to attract to the pier.

Table C-1: Annual Visitor Use Levels, Adaptive Use Alternatives

<u>Attraction</u>	<u>Great Lakes Park</u>	<u>Midwest Heritage Park</u>	<u>Chicago Cultural Park</u>
Retail	1,600,000	2,000,000	2,900,000
Marketplace/food service	1,200,000	1,900,000	4,200,000
Lodging	70,000	70,000	--
Cultural/recreational	3,400,000	4,100,000	3,600,000
Tour groups	<u>730,000</u>	<u>930,000</u>	<u>800,000</u>
Total	7,000,000	9,000,000	11,500,000

PARKING DEMAND

Parking needs were based on the assumptions that an annual average of 40 percent of all visitors would arrive by automobile (Barton-Aschman Associates 1981) and that parking should be adequate to accommodate demand on the 30th highest day of visitation. Other assumptions were that the average occupancy would be 2.5 persons per vehicle and that the average turnover per space would be three vehicles per day. Based on these assumptions, parking needs were estimated to be 1,600 spaces for the Great Lakes Park, 2,000 spaces for the Midwest Heritage Park, and 2,500 spaces for the Chicago Cultural Park. This amount of parking would not meet demand on the peak days of summer. This peak demand might be met by garages in Cityfront Center within walking distance (one-half mile) of the pier, or by the Monroe Street and Grant Park garages with transit connections to the pier.

TRANSIT DEMAND

Off-Pier Transit

Off-pier transit demand was based on the assumption that an annual average of 45 percent of all visitors would arrive by transit (Barton-Aschman Associates 1981). Based on this modal split, the transit demand to the pier would be as shown in table C-2.

Table C-2: Daily Transit Demand to Pier, Adaptive Use Alternatives

	<u>Average Day</u>	<u>30th Highest Day</u>
Great Lakes Park	8,630	13,980
Midwest Heritage Park	11,100	17,980
Chicago Cultural Park	14,180	22,970

The 1985 downtown transit study estimated that a transit link from the westside commuter rail stations to Navy Pier along the West Carroll Avenue corridor would carry from 15,300 to 36,700 passengers on an average weekday, depending upon the type of fixed-rail service. The estimates did not include a specific use concept for Navy Pier and presumed that passengers using existing bus and rail networks would continue to use them at or near existing levels. Earlier studies indicated that an AGT circulator distribution route serving Navy Pier from the west might attract 32,000 to 61,000 passengers on a weekday.

On-Pier Transit

The required capacity of the on-pier transportation system would be directly related to peak period demand. However, it appeared unreasonable to size the system for such activities as historical ChicagoFest attendance or a single event in the auditorium seating 4,000 persons. In all of the use alternatives, the auditorium would probably be the largest generator of traffic over a one-hour period. Consequently, if all 4,000 persons desired to arrive one hour prior to the event, the peak hour demand would be 4,000. Sizing the system to meet this demand would require extra vehicles that would be unused during nonpeak times. It would also require larger spaces for station areas.

Past studies prepared by the city and consultants have indicated that an on-pier system should be sized to accommodate 2,000 people per hour, one way, in spite of the fact that some passenger loading forecasts in some of the earlier studies have been as high as 4,700 people during a peak hour. The figure of 2,000 per hour one way was used in this study for the capacity of the system for all the alternatives. Although annual and daily visitation might vary by alternative, the capacity was held constant because of the size of the auditorium.

APPENDIX D: PRELIMINARY COST AND REVENUE ESTIMATES, ADAPTIVE USE ALTERNATIVES

The tables in this appendix itemize the estimated costs and revenues of the three adaptive use alternatives. These are order-of-magnitude estimates based on the square footage costs of work performed on other similar projects under federal contract. Table D-1 lists the costs of stabilization work needed immediately to slow the deterioration of the pier structures. Table D-2 lists the costs of basic repairs to the infrastructure (structural, mechanical, and electrical systems) needed to bring the entire pier to a usable condition. This work will be common to all three alternatives, regardless of the ultimate adaptive use of the pier. Table D-3 lists the additional costs of adapting the pier to a specific combination of uses; these costs vary by alternative. The totals shown for each alternative in table D-3 include the capital costs of stabilization (from table D-1), infrastructure repair (table D-2), and on-pier transportation systems. Additional cost data for the transportation systems are presented in table D-4.

The capital investment could be spread over a period of ten years by accomplishing the construction in three phases. Preliminary general phasing schemes for each alternative are presented in table D-5. The ultimate sequence of pier revitalization work will depend on the exact mix of uses and on more detailed cost and revenue figures. As developed so far, the phasing represents a logical development sequence that will allow for some revenue-generating uses in the early years of redevelopment. In each alternative, phase one includes the construction of a marina and rehabilitation of the recreation complex and the adjacent upper-level sections of the sheds for special events, since these uses will involve relatively moderate costs and will generate revenue. Other common elements in the early stages include the repair of the pier infrastructure and construction of administrative offices, service corridors, and maintenance areas to facilitate further development. Construction of visitor service facilities, development of an interim shuttle bus transit system, and improvements to the south dock are also scheduled early to encourage immediate public use of the pier.

Table D-6 lists the annual public costs for operations and maintenance under each alternative. These costs have not been computed for the activities expected to be operated by tenants such as museums, retail space, etc. Sources of revenue to potentially offset operation and maintenance costs and help retire the public debt are listed in table D-7.

Table D-1: Stabilization Costs

Recreation Complex

Repair roof leaks	\$ 23,000
Repair promenade railings	7,500
Repair masonry	44,000
Remove asbestos, relocate fuel tank	200,000
Subtotal	\$ 274,500

North and South Sheds

Abate roof leaks (\$26,000 every 6 mos.)	\$ 78,000
Protect openings in exterior walls	14,000
Repair fire doors	40,000
Install new power feed, remove Askeral	700,000
Install emergency lighting and generator (includes headhouse costs)	175,000
Subtotal	\$1,007,000

Headhouse

Stabilize entrance ramp (for future construction access)	\$ 480,000
Remove garage	32,500
Abate roof leaks (\$1,000 every 6 mos.)	3,000
Repair masonry	800,000
Subtotal	\$1,315,000
Total net costs	\$2,597,000
Total gross costs	\$3,636,000*

*Gross costs include an additional 40% of net construction costs for project planning and design, project supervision, and contingencies.

Table D-2: Infrastructure Repair Costs

Auditorium

Repair exterior doors, lump sum	\$ 15,000
Repair broken windows, lump sum	3,000
Replace floor covering, 700 sq yd @ \$35	24,500
Replace window coverings, lump sum	13,000
Install fire alarm system, lump sum	35,000
Repair concrete slab of towers, lump sum	70,000
Landscape features, lump sum	3,000
Fire sprinkler system	<u>80,000</u>
Subtotal	\$ 243,500

Recreation Building

Repair atrium skylight, lump sum	\$ 2,000
Repair exterior doors, lump sum	8,000
Repaint interior, two coats and scaffold, 20,000 sq ft @ \$1.20	24,000
Replace floor covering, 2,000 sq yd @ \$35	70,000
Repair elevator, lump sum	8,000
Connect to sewer system, lump sum	75,000
Install fire alarm system, 22,000 sq ft @ \$2.00	44,000
Install fire sprinkler system, 22,000 sq ft @ \$4.00	<u>88,000</u>
Subtotal	\$ 319,000

Shelter Building

Repair roof leaks, lump sum	\$ 12,000
Repair landscape features, lump sum	7,500
Repair exterior doors, lump sum	6,000
Install fire alarm system, 18,000 sq ft @ \$2.00	36,000
Install fire sprinkler system, 18,000 sq ft @ \$4.00	<u>72,000</u>
Subtotal	\$ 133,500

Terminal Building

Repair roof leaks, lump sum	\$ 4,000
Repair plaster walls and ceilings, 1,200 sq ft @ \$3.00	3,600
Repaint interior, two coats and scaffold, 26,100 sq ft @ \$1.20	31,320
Connect to sewer system, lump sum	45,000
Repair unit heaters, 5 at \$400 ea	2,000
Repair doors, lump sum	6,000
Install fire alarm system, 33,120 sq ft @ \$2.00	66,240
Install fire sprinkler system, 33,120 sq ft @ \$4.00	<u>132,480</u>
Subtotal	\$ 290,640

<u>Sheds, Upper Level</u>		
Replace deteriorated steel girts (50%), lump sum	\$1,200,000	
Repair floor slab and substructure (30%), lump sum	2,500,000	
Repair walkway slab and substructure, 24,000 sq ft @ \$50	1,200,000	
Replace roofing of storage and washroom, 69,300 sq ft @ \$8.00	554,400	
Remove and replace roofing, 396,000 sq ft @ \$8.50	3,366,000	
Clean, prime, and paint structural steel framework, 232 trusses plus purlins, lump sum	70,000	
Replace damaged walls in washroom, 40,000 sq ft @ \$9.00	360,000	
Replace exterior curtainwall w/new framing and triple glazing (fixed), 115,000 sq ft @ \$40	4,600,000	
Replace cupola with new framing and operable triple glazed windows, 56,000 sq ft @ \$45	2,520,000	
Repair all washroom facilities, finishes, and plumbing, 5,000 sq ft @ \$60	300,000	
Repair fire separation doors, 8 @ \$4,000 ea	32,000	
Repair fire sprinkler system, 400,000 sq ft @ \$2.00	800,000	
New connections to sewer system, lump sum	450,000	
Repair exterior lighting, lump sum	150,000	
Install emergency exit signs, lump sum	60,000	
Install fire alarm system, 400,000 sq ft @ \$2.00	800,000	
Smoke hatches, lump sum	100,000	
Replace wall between storage and washroom, 35,000 sq ft @ \$9.00	315,000	
New HVAC system, 400,000 sq ft @ \$12.00	4,800,000	
New electrical distribution system and lighting, 400,000 sq ft @ \$10.00	<u>4,000,000</u>	
Subtotal	\$27,772,400	
<u>Sheds, Lower Level</u>		
New electrical vaults, lump sum	\$ 700,000	
Rehabilitate interiors (structural, mechanical, electrical), 463,000 sq ft @ \$75.00	<u>\$34,725,000</u>	
Subtotal	\$35,425,000	
<u>Sheds, Upper Level Roadway</u>		
Remove and replace complete roadway and curb, both north and south sheds, 85,000 sq ft @ \$35.00	\$2,975,000	
Install new exterior lighting	<u>170,000</u>	
Subtotal	\$3,145,000	
<u>Transit Sheds</u>		
Remove sheds, 40,000 sq ft @ \$5.00	\$ 200,000	
Subtotal	\$ 200,000	

Headhouse

Install new roof, 11,200 sq ft @ \$7.00	\$ 78,400
Demolish interior, 33,600 sq ft @ \$4.00	134,400
Interior renovation/mechanical and electrical, 33,600 sq ft @ \$90.00	3,024,000
New drains and downspouts, lump sum	40,000
Sewer connections, lump sum	80,000
Fire sprinkler system, 33,600 sq ft @ \$4.00	134,400
Repair/replace deteriorated structural steel and concrete slab, lump sum	500,000
Fire alarm system, 33,600 sq ft @ \$2.00	<u>67,200</u>
Subtotal	\$4,058,400

Sewage System

Pipe: 18-in sewer, 3,500 lin ft @ \$100	\$ 350,000
5-ft concrete storm sewer, 3,500 lin ft @ \$800	2,800,000
Haul excavation earth, 13,000 cu yd @ \$15	195,000
Imported borrow, 13,000 cu yd @ \$20	260,000
10-ft x 10-ft trench, including system to prevent water infiltration, 3,500 lin ft @ \$200	700,000
Replace concrete, 650 cu yd @ \$700	455,000
Lift stations, 2 @ \$100,000 ea	200,000
Manhole, 12 @ \$2,000 ea	24,000
Storm sewer connections, lump sum	<u>130,000</u>
Subtotal	5,114,000

South Dock

Provide new lighting, lump sum	\$ 100,000
Provide sewer connections for ships, lump sum	300,000
Connect storm drains to storm sewer, lump sum	<u>100,000</u>
Subtotal	\$ 500,000

Pier Structure

Rehabilitate edge sheeting and concrete cap, 7,000 lin ft @ \$800	\$ 5,600,000
Repair bypass tunnel, 300 lin ft @ \$800	<u>240,000</u>
Subtotal	\$5,840,000
Total net costs	\$83,041,000
Total gross costs	\$116,257,400

*Gross costs include an additional 40% of net construction costs for project planning and design, project supervision, and contingencies.

Table D-3: Total Adaptive Use Costs, Alternatives

Great Lakes Park

Stabilization	\$ 2,597,000
Infrastructure repairs	83,041,000
Transportation system	7,500,000
Parking structures, 1,600 spaces @ \$12,000	19,200,000
Site development, 902,000 sq ft @ \$2.50	2,255,000
Marina, 400 slips @ \$7,500	3,000,000
Breakwater, 855 lin ft @ \$3,000	2,565,000
Dime Pier, 40,000 sq ft @ \$150	6,000,000
Pedestrian bridge, 7,000 sq ft @ \$150	1,050,000
Entrance ramp removal, 6,000 sq ft @ \$20	120,000
Elevators/escalators, 16 @ \$75,000	1,200,000
Administrative space, 26,000 sq ft @ \$50	1,300,000
Visitor services/information, 12,000 sq ft @ \$45	540,000
Maintenance/service areas, 16,000 sq ft @ \$35	560,000
Mechanical/electrical upgrades, lump sum	2,000,000
Covered atrium, 166,000 sq ft @ \$150	24,900,000
Landscaping, lump sum	1,000,000
Ice rink, 20,000 sq ft @ \$65	1,300,000
Special events (does not include previously rehabilitated space), 211,000 sq ft @ \$25	5,275,000
Museums, 152,000 sq ft @ \$65	9,880,000
Retail space, 38,000 sq ft @ \$30	1,140,000
Food service	
Restaurants, 13,000 sq ft @ \$140	1,820,000
Food court, 13,000 sq ft @ \$100	1,300,000
Cafe, 13,000 sq ft @ \$140	1,820,000
Water recreation area, lump sum	2,000,000
Boatel, 100 rooms plus coffee shop, lump sum	5,360,000
Tour and charter boat dock, lump sum	300,000
Net costs	\$189,023,000
Gross costs*	\$264,632,000

*Gross costs include an additional 40% of net construction costs for project planning and design, project supervision, and contingencies.

Midwest Heritage Park

Stabilization	\$ 2,597,000
Infrastructure repairs	83,041,000
Transportation system	6,900,000
Parking structures, 2,000 spaces @ \$12,000	24,000,000
Site development, 742,000 sq ft @ \$2.50	1,855,000
Marina, 400 slips @ \$7,500	3,000,000
Breakwater, 855 lin ft @ \$3,000	2,565,000
Dime Pier, 40,000 sq ft @ \$150	6,000,000
Pedestrian bridge, 2,000 sq ft @ \$150	300,000
Entrance ramp, 6,000 sq ft @ \$300	1,800,000
Elevators/escalators, 22 @ \$75,000	1,650,000
Administrative space, 27,000 sq ft @ \$50	1,350,000
Visitor services/information, 43,000 sq ft @ \$45	1,935,000
Maintenance/service areas, 23,000 sq ft @ \$35	805,000
Covered atrium, 200,000 sq ft @ \$130	26,000,000
Landscaping, lump sum	1,000,000
Special events (does not include previously rehabilitated space), 176,000 sq ft @ \$25	4,400,000
Conference/meeting rooms, 17,000 sq ft @ \$45	765,000
Mechanical/electrical upgrades, lump sum	2,000,000
Hostel, 35,000 sq ft @ \$45	1,575,000
Rail space, 50,000 sq ft @ \$30	1,500,000
Food Service	
Restaurants, 27,000 sq ft @ \$140	3,780,000
Food court, 20,000 sq ft @ \$100	2,000,000
Cafeteria, 17,000 sq ft @ \$65	1,105,000
Museums, 270,000 sq ft @ \$65	17,550,000
Theater, 21,000 sq ft @ \$55	1,155,000
Tour and charter boat dock, lump sum	500,000
Net costs	\$201,128,000
Gross costs*	\$281,579,000

*Gross costs include an additional 40% of net construction costs for project planning and design, project supervision, and contingencies.

Chicago Cultural Park

Stabilization	\$ 2,597,000
Infrastructure repairs	83,041,000
Transportation system	27,100,000
Parking structures, 2,500 spaces @ \$12,000	30,000,000
Site development, 1,060,000 sq ft @ \$2.50	2,650,000
Marina, 400 slips @ \$7,500	3,000,000
Breakwater, 855 lin ft @ \$3,000	2,565,000
Amphitheater, 2,500 seats @ \$2,000	5,000,000
Dime Pier, 40,000 sq ft @ \$150	6,000,000
Stage, lump sum	1,050,000
Pedestrian bridge, 7,000 sq ft @ \$150	1,050,000
Entrance ramp removal, 6,000 sq ft @ \$20	120,000
Elevators/escalators, 13 @ \$75,000	975,000
Administrative space, 31,000 sq ft @ \$50	1,550,000
Visitor services/information, 13,000 sq ft @ \$45	585,000
Maintenance/service areas, 9,000 sq ft @ \$35	315,000
Mechanical/electrical upgrade, lump sum	2,000,000
Covered atrium, 85,000 sq ft @ \$150	12,750,000
Landscaping, lump sum	2,000,000
Special events (does not include previously rehabilitated space), 211,000 sq ft @ \$25	5,275,000
Marketplace/food fair, 62,000 sq ft @ \$35	2,170,000
Retail space, 68,000 sq ft @ \$30	2,040,000
Food Service	
Restaurants, 30,000 sq ft @ \$140	4,200,000
Food court, 20,000 sq ft @ \$100	2,000,000
Museums, 117,000 sq ft @ \$65	7,605,000
Cinema, 16,000 sq ft @ \$40	640,000
Theater, 21,000 sq ft @ \$55	1,155,000
Art school, 42,000 sq ft @ \$40	1,680,000
Tour and charter boat dock, lump sum	300,000
Net costs	\$211,413,000
Gross costs*	\$295,978,000

*Gross costs include an additional 40% of net construction costs for project planning and design, project supervision, and contingencies.

Table D-4: Costs of On-Pier Transportation Systems,
Adaptive Use Alternatives (1985 estimate)

	<u>Capital Costs</u>	<u>Annualized Capital Costs</u> ¹	<u>Annual O & M Costs</u>	<u>Total Annual Costs</u>
<u>Great Lakes Park</u>				
High-capacity AGT on second level of north shed; three 100-passenger units	\$ 7,500,000	\$ 900,000	\$ 300,000	\$1,200,000
<u>Midwest Heritage Park</u>				
LRT on second level promenade: five ² 50- passenger units	\$ 6,900,000	\$ 900,000	\$ 500,000	\$1,400,000
<u>Chicago Cultural Park</u>				
Medium-capacity AGT at mid pier and moving walkways ³ on second level	\$27,100,000 ⁴	\$3,500,000	\$ 200,000 ⁵	\$3,700,000

Sources: Chicago Department of Public Works 1980; Barton-Aschman Associates 1981; De Leuw Cather & Company 1985; Urban Mass Transportation Administration 1985.

¹ Computed using a 10% salvage rate, 12% interest rate, 15-year life for vehicles/moving walkways, and 30-year life for guideways, stations, and other fixed facilities.

² Trolley costs based on latest estimated costs of restored trolley at Lowell National Historical Park. Capacity with standees would be approximately 100.

³ Two conventional walkways totaling 1,000 linear feet, plus two accelerated walkways totaling 1,800 linear feet.

⁴ Figure includes only AGT costs directly associated with pier activity (guideway on Dime Pier and across the water; guideway, station and support facilities on Navy Pier): \$15.0 million for AGT, \$12.1 million for moving walkways.

⁵ For moving walkways only.

Table D-5: Development Cost Phasing, Adaptive Use Alternatives

Great Lakes Park

Phase 1 (Years 1-3)

Stabilization	\$ 2,597,000
Infrastructure repairs	49,754,000
Marina	3,000,000
Breakwater	2,565,000
Administrative space	1,300,000
Visitor services/information	540,000
Maintenance/service areas	560,000
Landscaping	250,000
Special events space	2,600,000
Mechanical/electrical upgrades	2,800,000
Cafe	<u>1,820,000</u>
Net construction costs	\$ 66,986,000
Gross costs*	\$ 93,780,000

Phase 2 (Years 4-7)

Infrastructure repairs	\$ 33,287,000
Parking structure	19,200,000
Transportation system	7,500,000
Site development	2,255,000
Dime Pier	6,000,000
Vertical transportation	1,200,000
Entrance ramp - removal	120,000
Covered atrium	24,900,000
Landscaping	750,000
Retail space	1,140,000
Restaurant	1,820,000
Food court	1,300,000
Museums	9,880,000
Water recreation area	<u>2,000,000</u>
Net construction costs	\$111,352,000
Gross costs*	\$155,893,000

Phase 3 (Years 8-10)

Pedestrian bridge	\$ 1,050,000
Special events space	2,675,000
Ice rink	1,300,000
Boatel	5,360,000
Tour boat facilities	<u>300,000</u>
Net construction costs	\$ 10,685,000
Gross costs*	\$ 14,959,000

Grand Totals

Net construction costs	\$189,023,000
Gross costs*	\$264,632,000

Possible Additional Costs (Year 10+)

Additional covered atrium	\$ 12,000,000
Conservatory	<u>6,000,000</u>
Net construction costs	\$ 18,000,000
Gross costs*	\$ 25,200,000

*Gross costs include an additional 40% of net construction costs for project planning and design, project supervision, and contingencies.

Midwest Heritage Park

Phase 1 (Years 1-3)

Stabilization	\$ 2,597,000
Infrastructure repairs	49,754,000
Parking structure	12,000,000
Site development	928,000
Marina	3,000,000
Breakwater	2,565,000
Administrative space	1,350,000
Visitor services/information	1,935,000
Maintenance/service areas	805,000
Landscaping	250,000
Mechanical/electrical upgrades	2,000,000
Special events space	2,200,000
Restaurant	<u>2,000,000</u>
Net construction costs	\$ 81,384,000
Gross costs*	\$113,938,000

Phase 2 (Years 4-7)

Infrastructure repairs	\$ 33,287,000
Entrance ramp - rebuilt	1,800,000
Transportation system	6,900,000
Parking structure	12,000,000
Site development	927,000
Dime Pier	6,000,000
Vertical transportation	1,650,000
Covered atrium	26,000,000
Landscaping	750,000
Retail space	1,500,000
Food court	2,000,000
Museum(s)	17,550,000
Tour boat facilities	<u>500,000</u>
Net construction costs	\$110,864,000
Gross costs*	\$155,209,000

Phase 3 (years 8-10)

Pedestrian bridge	\$ 300,000
Special events space	2,200,000
Conference/meeting rooms	765,000
Hostel	1,575,000
Restaurant	1,780,000
Cafeteria	1,105,000
Theater	<u>1,155,000</u>
Net construction costs	\$ 8,880,000
Gross costs*	\$ 12,432,000

Grand Totals

Net construction costs	\$201,128,000
Gross costs*	\$281,579,000

*Gross costs include an additional 40% of net construction costs for project planning and design, project supervision, and contingencies.

Chicago Cultural Park

Phase 1 (Years 1-3)	
Stabilization	\$ 2,597,000
Infrastructure repairs	49,754,000
Parking structure	16,000,000
Site development	1,400,000
Marina	3,000,000
Breakwater	2,565,000
Administrative space	1,550,000
Visitor services/information	585,000
Maintenance/service areas	315,000
Landscaping	500,000
Special events space	2,650,000
Mechanical/electrical upgrades	2,000,000
Vertical transportation	300,000
Restaurant	<u>2,200,000</u>
Net construction costs	\$ 85,416,000
Gross costs*	\$119,582,000
Phase 2 (Years 4-7)	
Infrastructure repairs	\$ 33,287,000
Transportation system (moving sidewalks)	12,100,000
Vertical transportation	300,000
Entrance ramp-removal	120,000
Covered atrium	12,750,000
Market space	2,170,000
Landscaping	1,500,000
Retail space	2,040,000
Restaurant	2,000,000
Food court	2,000,000
Art school	1,680,000
Tour boat facilities	300,000
Museums(s)	<u>7,605,000</u>
Net construction costs	\$ 77,852,000
Gross costs*	\$108,993,000

Phase 3 (Years 8-10)	
Transportation system (on-pier AGT)	\$ 15,000,000
Parking structure	14,000,000
Site development	1,250,000
Dime Pier	7,050,000
Pedestrian bridge	1,050,000
Vertical transportation	375,000
Special events space	2,625,000
Amphitheater	5,000,000
Theater	1,155,000
Cinema	<u>640,000</u>
Net construction costs	\$ 48,145,000
Gross costs*	\$ 67,403,000

Grand Totals

Net construction costs \$211,413,000
 Gross costs* \$295,978,000

*Gross costs include an additional 40% of net construction costs for project planning and design, project supervision, and contingencies.

Table D-6: Annual Operation and Maintenance Costs,
Adaptive Use Alternatives

Great Lakes Park

Security (28 people)	\$ 700,000
Maintenance (50 people)	1,250,000
Administrative staff (7 people)	300,000
Equipment and materials	500,000
Utilities	350,000
Sales/advertising	100,000
Visitor services (5 people)	125,000
Cyclic maintenance*	1,264,000
Transportation	<u>300,000</u>
Total	\$4,889,000

Midwest Heritage Park

Security (28 people)	\$ 700,000
Maintenance (50 people)	1,250,000
Administrative staff (7 people)	300,000
Equipment and materials	500,000
Utilities	350,000
Sales/advertising	100,000
Visitor services (8 people)	200,000
Cyclic maintenance*	1,264,000
Transportation	<u>500,000</u>
Total	\$5,164,000

Chicago Cultural Park

Security (28 people)	\$ 700,000
Maintenance (50 people)	1,250,000
Administrative staff (7 people)	300,000
Equipment and materials	500,000
Utilities	350,000
Sales/advertising	100,000
Visitor services (5 people)	125,000
Cyclic maintenance*	1,264,000
Transportation	<u>200,000</u>
Total	\$4,789,000

*Annualized cost assuming a 25-year life cycle for capital improvements.

Table D-7: Annual Revenues, Adaptive Use Alternatives

	<u>Sales</u>	<u>Rental Revenue</u>	<u>Sales Tax (7%)</u>
<u>Great Lakes Park</u>			
Parking garage, 40% of 7 million visitors, assuming 2.5 passengers/car @ \$5/car Rental = 10% of sales	\$ 5,600,000	\$ 560,000	
Marina, 90% of 350 slips with avg. 36-foot boats @ \$5/ft/mo, plus 50% of 50 slips @ \$10/night x 180 days Rental = 12% of sales	734,400	88,000	
Fuel and bait sales at marina		2,000	
<u>Food Service</u>			
Rental = 5% of sales			
Food court, 65% of 7 million visitors @ \$1.65	7,507,500	375,000	\$ 526,000
Cafe, 400 seats @ \$6,000/yr, plus 100 seats @ \$7,000/yr	3,100,000	155,000	217,000
Restaurant, 400 seats @ \$8,500/yr, plus 100 seats @ \$8,000/yr	4,200,000	210,000	294,000
<u>Retail sales</u>	11,400,000	570,000	798,000
Rental = 38,000 sq ft @ \$15			
<u>Special events</u>	2,476,000		
Rental = 339,000 sq ft @ \$0.40/event for 10 major events, plus 140,000 sq ft @ \$0.40/event for 20 smaller events			
Water recreation complex, 1,000 people/day for 350 days @ \$2 Rental = 5% of sales	700,000	35,000	
Museums, 2 million visitors @ \$3/adult, \$1/child Rental = 5% of sales	4,000,000	200,000	
Boatel, 65% of 100 rooms @ \$65, plus 80 seats @ \$4,500/yr Rental = 5% of sales	1,902,125	95,000	133,000
Ice-skating rink, 250 persons/day @ \$3.50 for 150 days/yr		131,000	
Bait and tackle shop Rental = 5% of sales	100,000	5,000	7,000
Dock fees for tour and charter boats, 8 berths @ \$500/mo for 4 mo		16,000	
Total annual rental revenue		\$ 4,918,000	
Total annual sales tax			\$1,975,000

	<u>Sales</u>	<u>Rental Revenue</u>	<u>Sales Tax (7%)</u>
<u>Midwest Heritage Park</u>			
Parking garage, 40% of 9 million visitors, assuming 2.5 passengers/car @ \$5/per car Rental = 10% of sales	\$ 7,200,000	\$ 720,000	
Marina, 90% of 350 slips with avg 36-ft boats @ \$5/ft/mo plus 50% of 50 slips @ \$10/night x 180 days Rental = 12% of sales	734,400	88,000	
Fuel and bait sales at marina		2,000	
Food Service			
Rental = 5% of sales			
Food court, 60% of 9 million visitors @ \$2	10,800,000	540,000	\$ 756,000
Cafeteria, 30% of 9 million visitors @ \$1.50	4,050,000	202,500	283,500
Sit-down pier restaurant, 5% of 9 million visitors @ \$7	3,150,000	157,500	220,500
Terminal bldg. restaurant, 5% of 9 million visitors @ \$12	5,400,000	270,000	378,000
Retail sales	15,000,000	750,000	1,050,000
Rental = 50,000 sq ft @ \$15			
Special events		2,422,000	
Rental = 305,600 sq ft @ \$0.40/event for 10 major events, plus 150,000 sq ft @ \$0.40/event for 20 smaller events			
Museums, 3.5 million visitors @ \$2 Rental = 5% of sales	7,000,000	350,000	
Hostel, 90% of 150 dormitory beds @ \$8, plus 90% of 50 two-bed rooms @ \$12 Rental = 5% of sales	591,300	30,000	41,000
Theater, 400 seats @ \$1 seat tax for 10 events		4,000	
Conference and meeting rooms, 50 events @ \$150		7,500	
Bait and tackle shop Rental = 5% of sales	100,000	5,000	7,000
Dock fees for tour and charter boats, 8 berths @ \$500/mo for 4 mo		16,000	
Total annual rental revenue		\$ 5,564,500	
Total annual sales tax			\$2,736,000

	<u>Sales</u>	<u>Rental Revenue</u>	<u>Sales Tax (7%)</u>
<u>Chicago Cultural Park</u>			
Parking, 40% of 11.5 million visitors, assuming 2.5 passengers/car @ \$5/car Rental = 10% of sales	9,200,000	920,000	
Marina, 90% of 350 slips with avg 36-ft boats @ \$5/ft/mo, plus 50% of 50 slips @ \$10/night x 180 days Rental = 12% of sales	734,400	88,000	
Fuel and bait sales at marina		2,000	
Food Service Rental = 5% of sales			
Terminal bldg. restaurant, 430 seats @ \$12,558/yr	5,399,940	270,000	\$ 378,000
Food court, 70% of 11.5 million visitors @ \$2	16,100,000	805,000	1,127,000
Patio restaurants, 600 seats @ \$6,300/yr	3,780,000	189,000	265,000
Retail sales Rental = 68,000 sq ft @ \$15	20,400,000	1,020,000	1,428,000
Special events Rental = 340,000 sq ft @ \$0.40/event for 10 major events, plus 170,000 sq ft @ \$0.40/event for 20 smaller events		2,720,000	
Museums, 1.5 million visitors @ \$2 Rental = 5% of sales	3,000,000	150,000	
Marketplace/food fair Rental = 62,000 sq ft @ \$5		310,000	
Cinema, 300 seats @ \$1 seat tax for 10 events		3,000	
Amphitheater, 2,500 seats @ \$2 seat tax for 10 events		50,000	
Theater, 400 seats @ \$1 seat tax for 20 events		8,000	
Art school Rental = 42,000 sq ft @ \$5		200,000	
Bait and tackle shop Rental = 5% of sales	100,000	5,000	7,000
Dock fees for tour and charter boats, 8 berths @ \$500/mo for 4 mo		16,000	
Total annual rental revenue		\$ 6,756,000	
Total annual sales tax			\$3,205,000

APPENDIX E: PRELIMINARY COST AND REVENUE
ESTIMATES, PROPOSAL

The tables in this appendix itemize the estimated costs and revenues of the National Park Service proposal for adaptive use of Navy Pier. Table E-1 lists the total capital costs of adapting the pier for use, including capital costs of stabilization, infrastructure repair, the trolley system, and new development. These are order-of-magnitude estimates based on the square footage costs of work performed on other similar projects. Table E-2 lists the sources and estimates of annual revenue that would be available to finance public and private development. Private revenue estimates are based on industry standards and Chicago-area averages for the business activities included in the proposal; actual revenues could differ significantly.

Table E-1: Total Adaptive Use Costs, Proposal

Public Costs	
Stabilization	\$ 2,597,000
Infrastructure repairs	51,882,000
Dime Pier and causeways, 45,000 sq ft @ \$150	6,750,000
Site development with lagoon, lump sum	3,500,000
Marina, 400 slips @ \$7,500	3,000,000
Breakwater, 855 lin ft @ \$3,000	2,565,000
Amphitheater, lump sum	1,500,000
Pedestrian bridge, 7,000 sq ft @ \$150	1,050,000
Conservatory, 52,800 sq ft @ \$150	7,920,000
Visitor services/information, 27,500 sq ft @ \$45	1,238,000
Administrative space, 8,800 sq ft @ \$50	440,000
School program area, 8,200 sq ft @ \$45	369,000
 Subtotal, public net costs	\$ 82,811,000
 Subtotal, public gross costs	\$115,935,000*
 Private Costs	
Hotel, 350,000 sq ft @ \$120	\$ 42,000,000
Parking structure, 3,000 spaces @ \$12,000	36,000,000
Trolley system, lump sum	8,200,000
Infrastructure repairs	31,159,000
Covered atriums, 219,100 sq ft @ \$150	32,852,000
Mechanical/electrical, lump sum	2,000,000
Entrance ramp, 6,000 sq ft @ \$300	1,800,000
Elevators/escalators, 22 @ \$75,000	1,650,000
Landscaping, lump sum	1,000,000
Food service	
Restaurants, 63,500 sq ft @ \$140	8,890,000
Food Count, 26,000 sq ft @ \$100	2,600,000
Cafeteria, 15,600 sq ft @ \$35	546,000
Pavilion spaces, 215,000 sq ft @ \$25	5,375,000
Exhibition halls, 100,000 sq ft @ \$25	2,500,000
Marketplace, 57,000 sq ft @ \$35	1,995,000
Maintenance/service areas, 47,000 sq ft @ \$35	1,645,000
Retail space, 50,000 sq ft @ \$30	1,500,000
Art school/studios, 23,700 sq ft @ \$40	948,000
Nautical center, 18,000 sq ft @ \$30	540,000
Craft studios, 20,000 sq ft @ \$25	500,000
Administrative space, 10,000 sq ft @ \$50	500,000
Nursery/day care area, 8,200 sq ft @ \$42	369,000
Gallery, 6,400 sq ft @ \$25	160,000
 Subtotal, private net costs	\$184,729,000
 Subtotal, private gross costs	\$221,675,000**
 Total net costs	\$267,540,000
Total gross costs	\$337,610,000

* Public gross costs include an additional 40% of net construction costs for project planning and design, contract administration and project supervision, and contingencies.

**Private gross costs include an additional 20% of net construction costs for project planning and design, project supervision, and contingencies.

Table E-2: Annual Revenues, Proposal

<u>Private</u>	<u>Sales</u>	<u>Net Revenues</u>
Hotel		
72% of 500 rooms @ \$134	\$17,608,000	
Plus food, beverage, banquets/ meetings, etc.	<u>11,022,000</u>	
Hotel subtotal	\$28,630,000	\$6,614,000
Parking garage, 40% of 13 million visitors, assuming 2.5 visitors/ car @ \$5/car		
Revenue = 15% of sales	\$10,400,000	1,560,000
Food service		
Food court, 60% of 13 million visitors @ \$3.50		
Revenue = 10% of sales	27,300,000	2,730,000
Seafood restaurant, 925 seats @ \$5,500		
Revenue = 12% of sales	5,088,000	611,000
Old Chicago restaurant, 800 seats @ \$4,500		
Revenue = 12% of sales	3,600,000	432,000
Terminal restaurant, 430 seats @ \$5,500		
Revenue = 12% of sales	2,365,000	284,000
Special events		
Rental = 340,000 sq ft @ \$0.40/event for 12 major events, plus 170,000 sq ft @ \$0.40/event for 24 smaller events		3,264,000
Pavilions		
Rental = 248,900 sq ft @ \$7.50		1,867,000
Retail sales		
Rental = 50,000 sq ft @ \$20		1,000,000
Craft studios/chandlery		
Rental = 30,000 sq ft @ \$10		300,000
Marketplace		
Rental = 57,000 sq ft @ \$5		285,000
Art school/gallery/boating school		
Rental = 38,000 sq ft @ \$5		<u>190,000</u>
Subtotal, annual private revenue		\$19,137,000
Public		
Sales tax, \$50,934,900 sales @ 7%		\$ 3,565,000
Hotel room tax, \$17,607,600 sales @ 8%		1,409,000
Marina, 90% of 350 slips w. avg. 36-ft boats @ \$5/ft/mo., plus 50% of 50 slips @ \$10/night x 180 days.		
Rental = 12% of sales	725,000	87,000
Marina fuel sales		2,000
Dock fees for tour and excursion boats, 8 berths @ \$500/mo for 4 mos		<u>16,000</u>
Subtotal, annual public revenue		\$ 5,079,000
Grand Total, annual revenue		\$24,216,000

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